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ENVIRONMENTAL ASSESSMENT BOARD

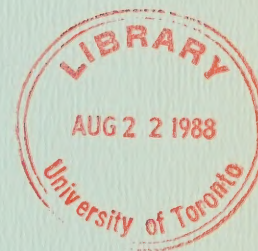
VOLUME: XXXII

DATE: Thursday, August 11th, 1988

BEFORE: M.I. JEFFERY, Q.C., Chairman

E. MARTEL, Member

A. KOVEN, Member




FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810

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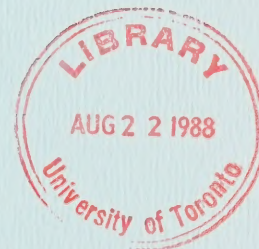
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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council
(O.C. 2449/87) authorizing the
Environmental Assessment Board to
administer a funding program, in
connection with the environmental
assessment hearing with respect to the
Timber Management Class
Environmental Assessment, and to
distribute funds to qualified
participants.

Hearing held at the Ramada Prince Arthur
Hotel, 17 North Cumberland St., Thunder
Bay, Ontario, on Thursday, August 11th, 1988,
commencing at 8:30 a.m.

VOLUME XXXII

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member

A P P E A R A N C E S

MR. V. FREIDIN, Q.C.)	MINISTRY OF NATURAL
MS. C. BLASTORAH)	RESOURCES
MS. K. MURPHY)	
MR. B. CAMPBELL)	MINISTRY OF ENVIRONMENT
MS. J. SEABORN)	
MR. R. TUER, Q.C.)	ONTARIO FOREST INDUSTRY
MR. R. COSMAN)	ASSOCIATION and ONTARIO
MS. E. CRONK)	LUMBER MANUFACTURERS'
MR. P.R. CASSIDY)	ASSOCIATION
MR. J. WILLIAMS, Q.C.	ONTARIO FEDERATION OF
	ANGLERS & HUNTERS
MR. D. HUNTER	NISHNAWBE-ASKI NATION
	and WINDIGO TRIBAL COUNCIL
MR. J.F. CASTRILLI)	
MS. M. SWENARCHUK)	FORESTS FOR TOMORROW
MR. R. LINDGREN)	
MR. P. SANFORD)	KIMBERLY-CLARK OF CANADA
MS. L. NICHOLLS)	LIMITED and SPRUCE FALLS
MR. D. WOOD)	POWER & PAPER COMPANY
MR. D. MacDONALD	ONTARIO FEDERATION OF
	LABOUR
MR. R. COTTON	BOISE CASCADE OF CANADA
	LTD.
MR. Y. GERVAIS)	ONTARIO TRAPPERS
MR. R. BARNES)	ASSOCIATION
MR. R. EDWARDS)	NORTHERN ONTARIO TOURIST
MR. B. McKERCHER)	OUTFITTERS ASSOCIATION
MR. L. GREENSPOON)	NORTHWATCH
MS. B. LLOYD)	

APPEARANCES: (Cont'd)

MR. J.W. ERICKSON, Q.C.)	RED LAKE-EAR FALLS JOINT
MR. B. BABCOCK)	MUNICIPAL COMMITTEE
MR. D. SCOTT)	NORTHWESTERN ONTARIO
MR. J.S. TAYLOR)	ASSOCIATED CHAMBERS OF COMMERCE
MR. J.W. HARBELL)	GREAT LAKES FOREST
MR. S.M. MAKUCH)	PRODUCTS
MR. J. EBBS	ONTARIO PROFESSIONAL FORESTERS ASSOCIATION
MR. D. KING	VENTURE TOURISM ASSOCIATION OF ONTARIO
MR. D. COLBORNE	GRAND COUNCIL TREATY #3
MR. R. REILLY	ONTARIO METIS & ABORIGINAL ASSOCIATION
MR. H. GRAHAM	CANADIAN INSTITUTE OF FORESTRY (CENTRAL ONTARIO SECTION)
MR. G.J. KINLIN	DEPARTMENT OF JUSTICE
MR. S.J. STEPINAC	MINISTRY OF NORTHERN DEVELOPMENT & MINES
MR. M. COATES	ONTARIO FORESTRY ASSOCIATION
MR. P. ODORIZZI	BEARDMORE-LAKE NIPIGON WATCHDOG SOCIETY
MR. R.L. AXFORD	CANADIAN ASSOCIATION OF SINGLE INDUSTRY TOWNS
MR. M.O. EDWARDS	FORT FRANCES CHAMBER OF COMMERCE
MR. P.D. McCUTCHEON	GEORGE NIXON

(iii)

APPEARANCES: (Cont'd)

MR. C. BRUNETTA

NORTHWESTERN ONTARIO
TOURISM ASSOCIATION

I N D E X O F P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>JOHN EDWARD OSBORN, Recalled</u>	
<u>KENNETH A. ARMSON, Recalled</u>	
<u>DAVID GORDON, Sworn</u>	
<u>JOHN RANDOLPH CARY, Sworn</u>	5283
Continued Direct Examination by Mr. Freidin	5283

(v)

I N D E X O F E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
146	Addendums to Exhibit 135.	5283
147	Diagram explaining modeling versus real life.	5374
148	Document pertaining to Board's site visit July 18-21, 1988.	5389

1 ---Upon commencing at 8:35 a.m.

2 THE CHAIRMAN: Good morning. Please be
3 seated.

4 Ladies and gentlemen, just before we
5 start, I just wanted to confirm, Mr. Freidin, that the
6 requirement for the Executive Summary did commence with
7 witness statement No. 7 and so, therefore, the Board
8 would ask that you produce that Executive Summary as
9 soon as possible so that it may be sent out and
10 distributed to all of the parties, including the Board.

11 MR. FREIDIN: I may have some comments to
12 make and I would like an opportunity to reserve those
13 comments until after the lunch break.

14 THE CHAIRMAN: Very well. And the second
15 matter, the Board has also reviewed the Procedural
16 Directives and, as was indicated yesterday, the 90 days
17 from the commencement of the hearing expired I think
18 yesterday where the parties should indicate to the
19 Board the location at which they intend to present
20 their evidence.

21 Now, the Board is going to formally
22 extend this to the end of September. So that long as
23 we have this information by the time we break for
24 October that would be acceptable, and the Board would
25 also ask that the parties, in addition to indicating

1 the location at which they want to present their
2 evidence also, to the extent possible, indicate how
3 long they expect the presentation of their evidence to
4 take and whether or not they intend to call witnesses.

5 Again, when it comes to moving the
6 proceedings around the province it is going to be, I
7 fear, somewhat of a logistical nightmare to book the
8 appropriate space for the right amount of time and I
9 think that any further information that we have as to
10 the intention of the parties will be very helpful.

11 It is also the Board's suggestion, Mr.
12 Freidin, that consideration be given to some kind of
13 vehicle that could travel to all of the other
14 locations, carrying all of the exhibits. And the
15 Board's suggestion might be to obtain some kind of
16 vehicle where the stuff could be filed inside, in some
17 kind of order, and parked outside the location where
18 the exhibits could be retrieved, if necessary. That
19 would make it a lot easier than trying to ship it
20 around in advance and having to set them up in some
21 room where they will be filed away in boxes, et cetera.

22 It is a possibility, and I know that this
23 has been done in connection with some other hearings
24 and that suggestion has worked quite well. So the
25 Board would ask you to give some consideration to that.

1 Okay. Other than that, unless there is
2 any other further preliminaries, we can recommence with
3 the direct examination of Panel 4.

4 MR. FREIDIN: Mr. Chairman, I would like
5 to hand out the additional documents that Mr. Gordon
6 will be referring to in his evidence. They are almost
7 totally composed of documents which are going to be
8 used to explain material which is in the witness
9 statement as opposed to being completely new
10 information.

11 So I don't feel anybody will be
12 prejudiced by these particular documents, rather they
13 should be helpful to follow the evidence.

14 And what I have done is, I have numbered
15 in the top right-hand corner of each page a number and
16 280A, that means it will be referred to after page 280.
17 Then there are a series of pages at the end, 323, which
18 don't have an A, B, or C. That's because those are the
19 lost documents in the witness statement so we just
20 added four or five pages to the witness statement.

21 THE CHAIRMAN: I take it these do not
22 refer to just one document; is that correct?

23 MR. FREIDIN: These are additional pages
24 to --

25 THE CHAIRMAN: Exhibit 135?

1 MR. FREIDIN: --the witness statement,
2 yes.

3 THE CHAIRMAN: Okay, I think we better
4 mark the package as a further exhibit, Exhibit No. 146
5 and we can entitle it: Addendums to Exhibit 135.
6 ---EXHIBIT NO. 146: Addendums to Exhibit 135.

7 JOHN EDWARD OSBORN,
8 KENNETH A. ARMSON,
9 JOHN RANDOLPH CARY,
DAVID GORDON, Resumed

10 CONTINUED DIRECT EXAMINATION BY MR. FREIDIN:

11 Q. Mr. Gordon, I understand that the
12 section of the witness statement that you will be
13 speaking to are paragraphs 64 to paragraphs 104?

14 MR. GORDON: A. That's correct.

15 Q. Before you get into those paragraphs,
16 perhaps you could just outline for the Board generally
17 what your evidence is about and sort of the major
18 sections of your evidence and how they fit together?

19 A. Yesterday from Dr. Osborn we heard a
20 description of the model and how it works and, in this
21 description, he described the inputs generically.

22 Today, my first part of my evidence will
23 be a description of the actual inputs we put in in the
24 model and initially will describing what I am terming
25 the base inputs. After I describe those base inputs, I

1 will then be proceeding to describe five different
2 scenarios relative to wood supply in Ontario, relative
3 to different types of forest.

4 As I describe those five scenarios, I
5 will also be describing adjustments made to the
6 previously described base inputs. After I do that;
7 that is, describe the five scenarios and show what the
8 results are, what the outputs are from the model, I
9 will then go through a bit of discussion and draw some
10 conclusions as to what I have found -- what we have
11 found by going through this analysis.

12 Q. All right. And I understand that you
13 are going to begin by describing the area that in fact
14 was the subject matter of the simulations; is that
15 correct?

16 A. That's correct. The first decision
17 that we had to make was: How are we going to divide up
18 the area of the undertaking to do this analysis. On
19 this map you see the northern border of the area of the
20 undertaking and the southern border.

21 Within the area --

22 Q. And just so they can follow along. I
23 may just advise the Board what pages these are in the
24 witness statement in case you want to make a reference
25 in your notes. It is Document 34, page 271.

1 A. As the Board will recall in previous
2 evidence of that strategic land use planning exercise,
3 we divided the province into three planning regions.
4 What you see on this map is the portion of the planning
5 regions that fall within the area of the undertaking.
6 So you have got the three planning regions, the
7 northwestern, the northeastern and the southern
8 constrained by the boundaries of the area of the
9 undertaking.

10 So that was the first division we made in
11 our analysis.

12 Then referring to page 272 in the panel
13 statement, we took a closer look within each region as
14 to what were the types of forest that were in each
15 region.

16 If you go to the northwest planning
17 region there are two main types of forest. The two
18 main types are the softwood type and the intolerant
19 hardwood type and we are calling these types of forests
20 coertype. Within the softwood coertype we have
21 working groups such as jack poine, black spruce, white
22 pine, red pine, balsam fir, et cetera, and within the
23 intolerant hardwood coertype we have the working
24 groups poplar and white birch.

25 The reason you see no tolerant hardwoods

1 there; i.e., maples or whatever is because there is --
2 we withdrew such stands in northwestern Ontario. Then
3 when you move east towards the northeast planning
4 region you see we have listed three covertypes and
5 included the intolerant coertype, that is because in
6 the southern part of this region you have the tolerant
7 hardwoods showing up; the maples, the yellow birches,
8 et cetera.

9 Then as well we have those three types in
10 the southern planning region, that part of the planning
11 region that is in the area of the undertaking and
12 basically that is the Algonquin administrative region.

13 Referring to page 273 of the panel
14 statement, we then took a closer look at the breakdown
15 of these covertypes by planning region, by area of the
16 coertype, and as you will see, when you look at all of
17 Ontario within the area of the undertaking, most of the
18 coertype that is out there is the softwood, the green
19 area.

20 And you will see that most of the
21 softwood coertype is in northern Ontario; that is, in
22 the northwest and northeast planning regions. As well,
23 in northern Ontario, a significant component of the
24 forest is the intolerant hardwood coertype, poplar and
25 white birch working groups.

1 Q. And on that particular diagram I
2 understand that you have a section which gives the
3 percentages of the various covertypes, softwoods and
4 intolerant hardwoods, et cetera?

5 A. That's correct.

6 Q. Perhaps you could just sort of review
7 those?

8 A. When you look at those two covertypes
9 I just discussed the softwood and the intolerant
10 hardwood covertypes in northern Ontario and you add up
11 the areas, they compose 93.7 per cent of the total area
12 of the undertaking relative to production forest.

13 Q. So the areas that you are showing
14 here by coertype refer to the production forest?

15 A. That is correct. You will see that
16 the tolerant hardwood coertype, here and here, the
17 northeast planning region and the southern planning
18 region, makes up a very small component of the total
19 pie.

20 We made the decision that, therefore, we
21 would look in our analysis specifically at northern
22 Ontario and specifically at those two covertypes in
23 northern Ontario, the softwood and intolerant hardwood
24 covertypes which compose 94 per cent of the production
25 forest within the area of the undertaking.

1 For the Board's information and reference
2 to page 274 in the panel statement, we have a summary
3 of the wood harvested from Crown land based on scaling
4 returns, 1986-1987. And, as you can see - this is
5 broken down by species, not coertype - but as you can
6 see when you look at the softwood species; jack pine,
7 black spruce, white pine, red pine, you can see that
8 most of the wood harvested in Ontario is softwood and
9 from those two northern planning regions.

10 And the second most important group of
11 species are the intolerant hardwood species, poplar and
12 white birch. And, again, they are harvested to a large
13 extent in northern Ontario.

14 Q. Now, just leaving that up there for
15 one moment, Mr. Gordon, could you just advise what the
16 source of your harvest data was?

17 A. The 1986-1987 scaling returns.

18 Q. And in the box on the right-hand side
19 where you have listed, I guess the heading: Demand,
20 what is the MM cubic metres mean?

21 A. It means millions of cubic metres.

22 Q. And is that actual harvest then or is
23 it demand by the mills?

24 A. That's actual harvest which I have
25 equated to demand.

1 Q. And in this case, the softwoods again
2 make up the largest component then?

3 A. That's correct.

4 Q. All right, thank you.

5 A. If you add together the softwoods
6 species and intolerant hardwood species that are
7 harvested in northern Ontario, the northwest and
8 northeast planning regions, they totaled in that year
9 94 per cent of the Crown land harvest.

10 Therefore, we had decided what area of the
11 province we are going to look at in these scenarios, we
12 decided to look in northern Ontario in the softwood and
13 intolerant hardwood covertypes. And, therefore, we now
14 had to go ahead and make some model inputs.

15 And what I am now going to do is describe
16 the numbers that we put into the computer from this
17 list here, the model inputs and we are going to go
18 through 13 of them.

19 Q. And the list of model inputs that you
20 have just referred to is in fact page 275 of the
21 witness statement? Take your time, Mr. Gordon.

22 A. When you are going to do a simulation
23 with the computer, the first thing you have to decide
24 is which land base are you going to analyse. When we
25 did this analysis we analysed the planning regions

1 separately; that is, we analysed northwestern Ontario
2 on its own and northeastern Ontario on its own.

3 So, therefore, when you are going to go
4 and sit in front of the computer and do an analysis you
5 have to decide what you are going to look at and so you
6 would make a decision, for example, to look at the
7 northwest planning region and within that planning
8 region the softwood covertype, for example.

9 Later on you are going to recognize that
10 these five scenarios include five sets of analyses.
11 So, therefore, because I am looking at the planning
12 regions separately, basically we did ten analyses.

13 However, when I present the results I am
14 presenting the results combined for the two planning
15 regions, therefore, I am dividing them to compose
16 northern Ontario and the only reason I am doing that is
17 so that I don't have to go through it ten times.

18 So you have made the decision as to what
19 area you are going to look at and you input from the
20 FRI data base the Crown land production forest Category
21 1, and included in that will be site classes X, 1, 2
22 and 3, not site class 4.

23 Q. Category 1 of the FRI Crown land
24 production forest refers to what?

25 A. I'm sorry?

1 Q. Is the Crown land production forest?

2 A. It's Crown land ownership, that's
3 correct.

4 Q. You were looking then only at Crown
5 land within these areas that you indicated you looked
6 at?

7 A. That's right. And, for example, we
8 didn't include Crown land No. 7 which I believe is
9 parks. So even parks are Crown land, we didn't include
10 that area in our analysis.

11 Q. And you didn't look at private land
12 or anything other than Crown?

13 A. That's correct. As you input this
14 data, obviously as Dr. Osborn explained, you are
15 inputting age-class area information and volume
16 information and the computer generates from that old
17 forest yield tables in that figures out the average
18 volume that a given age-class in the forest has per
19 hectare.

20 And one very important thing to recognize
21 and be cognizant of is that when we enter the volumes
22 for the softwood coertype, for example, when the area
23 for a jack pine stand goes into the computer, you must
24 recognize that in these analysis, the analysis assumes
25 that all the volume in that stand is softwood.

1 And, in my opinion, that is a suitable
2 assumption to make for this macro level analysis.

3 THE CHAIRMAN: Am I correct in assuming
4 that it also -- the computer also assumes that all the
5 trees in that stand are jack pine?

6 MR. GORDON: It assumes -- in one respect
7 it assumes that they are all softwood species.

8 MR. FREIDIN: Q. In terms of volume
9 calculations that the computer does, does it assign
10 volumes to that particular stand on the basis that it
11 is all jack pine.

12 MR. GORDON: A. No, it doesn't. What it
13 does is it collects all the information for each
14 individual stand that goes into the computer at times
15 zero, when you are ready to press the button, it just
16 generally assumes that it is all softwood. It doesn't
17 differentiate between jack pine species versus black
18 spruce volumes versus white pine volumes.

19 Q. I understand that later you will be
20 dealing with how those volumes -- what volumes were
21 used or what species were used to calculate the
22 volumes?

23 A. That's correct, to some extent. As I
24 go through this I am going to check off each individual
25 input so we can keep track of where I am. The next

1 input that I am going to talk about is age of death as
2 found on page 277 of the panel statement.

3 I am having problems focusing, so I am
4 just going to see about that.

5 MR. CARY: A. Maybe because it is raising
6 itself.

7 MR. GORDON: A. Okay. We have to make
8 assumptions about age of death. And basically when you
9 look at the softwood coertype we assume that the old
10 forest would die on average, if not depleted by fire,
11 insects or harvesting, at 150 years. There is no
12 question that some stands break up before that and some
13 stands last longer than that. But, on average, based
14 on experience we feel that's a reasonable estimate.

15 Q. And did Dr. Osborn speak to how these
16 ages of death were determined yesterday. Whether he
17 did or he didn't, perhaps you could indicate how they
18 were determined?

19 A. To a large extent, while we did look
20 at the normal yield tables and the flow studies, what
21 we are looking at here is making decisions based on
22 experience, based on what we have seen happening out
23 there in the forest. And, in my estimation - or we
24 wouldn't be using these numbers - they are reasonable.

25 For the intolerant hardwood coertype we

1 are dealing with a faster growing species, poplar and
2 white birch and, therefore, if anything, it tends to
3 grwo quicker. They also tend to last for a shorter
4 period of time. And there we use 120 years.

5 For the four levels of new forest that
6 show up in the simulation, we again have to identify
7 ages of death and, as you can see, we assumed that for
8 the new forest; that is natural regeneration, it would
9 live as long as the old forest, 150 years relative to
10 the softwood covertime.

11 As you move from the new forest 1 to the
12 new forest 4, we assumed, because the trees would be
13 growing quicker, they would not last as long. For the
14 intolerant hardwood covertime we kept it relatively
15 simple and we assumed in all cases that the age of
16 death was 100 years.

17 And when I refer to those different types
18 of new forest I have got them summarized right here:
19 New forest 1, 2, 3 and 4 extensive, basic, intensive
20 and elite, and the definitions natural regeneration for
21 extensive, seeding and modified harvest cutting,
22 scarification for basic, the largest component usually
23 being seeding, and intensive being planting and elite
24 being planting but genetically-improved stock.

25 MR. MARTEL: Can I ask you a very simple

1 question. On the definitions of the forests, I guess
2 it was just a basic decision, but when you use the term
3 intensive, it gives a connotation that you are really
4 doing something to it and yet when you compare it to
5 No. 1 and -- or No. 2 and 4 there is very little done
6 in 3. 2 and 4 have extreme -- or, at least, my
7 perception of it, addition to it in terms of work.

8 That connotation just seems to --

9 MR. GORDON: I probably haven't been very
10 clear in explaining the differences. But, for example,
11 if we compare basic to intensive, basic includes
12 different types of regeneration treatments; you have
13 seeding on some sites, we have modified harvest
14 cutting, for example, strip cutting on some sites, you
15 have scarification on some sites.

16 Intensive is where we go and plant trees.
17 and so what happens in this level of management versus
18 this level of management is that we have to go and site
19 prepare - and I will talk specifically about seeding -
20 we have to go and site prepare, as we do have to in
21 planting.

22 But then all we have do is basically, in
23 most cases - and we are usually talking about jack pine
24 seeding - is we drop seed from the helicopter or a
25 plane. So we are calling arbitrarily that basic.

1 In intensive what we have to do is
2 besides site preparing we have to grow trees for three
3 years, up to three years in the nursery then we have to
4 have personell walk out on the site and do a lot of
5 work. And very often following the seeding versus
6 planting, usually we plant sites that we call more
7 competitive, there is more competition brush et cetera
8 that comes up.

9 So usually, it's not always the case,
10 usually you will require a tending treatment on those
11 sites after you have planted and sometimes to a larger
12 extent you don't require such a tending treatment.
13 Because more tending usually that takes place on these
14 sites.

15 And, as you recognize, the difference
16 between this and this, exact same treatments taking
17 place, all we are doing is planting better trees, trees
18 that will grow faster.

19 MR. FREIDIN: Q. And, Mr. Gordon, just
20 for the record, when you do that, try not to refer to
21 this, identify which one you are talking about so we
22 can follow. This line re: rotation ages is at page
23 278.

24 A. At times zero you have to make some
25 decisions on rotation ages.

1 Q. And what's times zero?

2 A. In our analysis, times zero is 1986
3 and, therefore, the FRI database that's entered in 1986
4 is stands that are entered in my discussions here are,
5 therefore, termed old forest. So it is what has
6 happened up to 1986, anything up to then in this
7 analysis is old forest.

8 After 1986 in the simulation any forests
9 that are depleted and then a new forest starts to come
10 up, I term those new forests in this analysis.

11 And what to see here is the summary of the
12 rotation ages: Old forest, 19 years for the softwoods,
13 and then for new forest 1, softwoods 120; we are
14 assuming it will take a little longer; new forest 2,
15 90; new forest 3, 606 years; new forest 4, 50 years.

16 In other words, when we plant trees that
17 will grow quicker we are expecting a shorter rotation.
18 For intolerant hardwoods, again, as with the age of
19 death, we have kept it relatively simple, 70 years
20 throughout.

21 Q. And there is a reference at the
22 bottom of that particular page, perhaps you can just
23 speak to that briefly?

24 A. As Dr. Osborn pointed out yesterday,
25 the analysis we have done is demand driven, they are

1 required, so that the computer model will simulate, to
2 enter rotation ages and it does provide you with some
3 information. But while we have entered rotation ages
4 they have no effect on the output and that if I had
5 changed these numbers, which I think are reasonable
6 numbers, if I change these numbers in this analysis, it
7 it wouldn't have changed the output because in this
8 model we are cutting hectares to meet the projected
9 demand.

10 The next input which you make at times
11 zero, as Dr. Osborn described, is inputs relative to
12 yield curves: How fast will the forest grow. When you
13 input a number of hectares at times zero if nothing
14 happens to those hectares relative to depletion, if
15 they are not eaten by insects or destroyed by disease
16 or burned or harvested, they move up in age-class.

17 How does that happen within the model.
18 Relative to the old forest, the volumes assumed as the
19 stands age relate to the average yields per hectare
20 that are developed when the information is entered in
21 year zero and what do I mean by that?

22 Q. The document that I believe is going
23 to be referred to now is part of the addition, the
24 first three pages of the Exhibit 146 are identified as
25 280A, 280B, and 280 C to go along with this information

1 in relation to yield curves.

2 A. So here I am looking at page 280A and
3 these are the basic assumptions we made relative to
4 yield and the black line here, the middle line, is the
5 yields that were anticipated for the old forest in the
6 northwest planning region, softwood covertime. There
7 was little difference when you look at the softwood
8 covertime in the northeast planning region.

9 And so if a stand was 50 years old, you
10 would have this volume and if nothing happened to it
11 over a five-year period --

12 Q. This volume being what, just
13 approximate?

14 A. Approximately 140 or so--

15 Q. Thank you.

16 A. --gross total cubic metres per
17 hectare. If nothing happened to that stand in the
18 five-year period in the simulation and, that is, I mean
19 was not depleted, then the model assumed that we have
20 moved up five years and would then have approximately
21 150 cubic metres per hectare.

22 In general terms, for the other types of
23 forest, the new forest, specifically when we are
24 looking at the softwood covertime, you can see that we
25 assumed that the volumes for the elite new forest and

1 the intensive new forest would be greater than the old
2 forest yields. And those that were left to naturally
3 regenerate; that is, the green line here, and the areas
4 that we seeded, would have yields that were, on
5 average, lower than the old forest yields for a given
6 age. Those were our basic assumptions on yields.

7 For intolerant hardwood covertime, again
8 we kept it simple. We assumed that the new forest and
9 the old forest, for a given age, would have the same
10 yield. I am looking at page 280C here.

11 So, therefore, what we have done so far
12 is we have inputted all the information at times zero
13 and now we must start making decisions every five years
14 in the simulation relative to these factors, factors 5
15 to 13.

16 One of the most important assumptions you
17 makes relates to demand and if you look at the province
18 how much wood is harvested from Crown land in the
19 province; in 1986-7 it was 20.5-million cubic metres.
20 We assume, based on a review of available literature
21 such as FAO, et cetera that --

22 Q. What's FAO?

23 A. Federation -- excuse me, Food and
24 Agriculture Organization, UN. We assumed, based on a
25 review of available projections that demand would grow

1 at one and a half per cent per annum. We arbitrarily
2 decided that we would cap that growth after 30 years in
3 the projection which was roughly equivalent to 2020.
4 That is an arbitrary decision. We could have capped at
5 20 years or 40 years. We made that decision
6 arbitrarily and in part to recognize that we are
7 dealing with a finite land base.

8 If you look at the total volume harvested
9 in the province from Crown land and make that
10 assumption, the 20.5-million cubic metres that are now
11 being harvested would increase to 32-million cubic
12 metres by approximately 2020. To be exact, 2016.

13 And then after that initial 30-year period
14 we held demand constant. As Dr. Osborn pointed out
15 yesterday in the simulation to meet this projected
16 demand, we cut the oldest stands first. And, again as
17 Dr. Osborn pointed out, we are harvesting to meet
18 demand, we are not controlling this through a forest
19 regulation method such as MAD.

20 When we look at the growth of demand it is
21 basically a judgment call and recognizing that it was a
22 judgment call what we have shown here is some potential
23 changes to demand and how that affects the final
24 overall demand in the province. And, for example, our
25 basic assumption is that the present demand of

1 20.5-million cubic metres will increase at a rate of
2 1.5 per cent per year for 30 years and, therefore, for
3 30 years from 1986, in general terms, the final demand
4 will be 32-million cubic metres.

5 For comparison purposes we have shown the
6 effect of a two per cent increase in annual demand over
7 a 23-year period and when you apply this to the present
8 demand of 20.5 you come up with the same final demand
9 23 years from now.

10 So all we are trying to do is just show
11 what some shifts in the 1.5 per cent would be versus
12 different periods of growth.

13 Obviously, as you can see in the fourth
14 line here, if you assume a two per cent rate of growth
15 for almost the same number of years, 27, then you have
16 a larger demand.

17 As pointed out in earlier panels by Dr.
18 Osborn, the volumes are a gross total volume from the
19 FRI database.

20 Q. And you are now referring to page
21 283, I believe?

22 A. That's correct. Because the volumes
23 entered initially at times zero are in gross total
24 volume and you are required to enter your demand in net
25 merchantable volume, you have to enter a utilization

1 factor to convert the gross total to net merchantable
2 and, as you will recall, you have a gross total volume
3 out there in the forest, the total tree, if you take
4 the stump away from that and the top away from that you
5 have gross merchantable. Then if you take the cull out
6 of the stem of the tree you have net merchantable. So
7 we had to enter factors to do this conversion.

8 The factors we used are based on the cull
9 survey tables. I am not aware if that's a document
10 that's entered yet or not.

11 Q. It has been explained, I believe.

12 A. Okay. I wasn't planning on going
13 into detail as to exactly where the numbers came from,
14 but that's available.

15 Q. It doesn't hurt sometimes to go over
16 things the second time. So perhaps you could just sort
17 of explain what those cull survey tables are?

18 A. I have in front of me a set of the
19 cull survey tables, this small golden book. It is
20 based on some sampling done by around 1957 across the
21 Province of Ontario and it is broken down by species
22 and by forest regions.

23 So if you go into the book you will find,
24 for example, tables that relate to black spruce in the
25 boreal forest region; i.e., northern Ontario and it

1 shows the number of trees that they sampled and, as
2 well, it has numbers that estimate the amount of cull
3 in trees and, as well, what portion of the tree is in
4 the top and stump. And, therefore, by looking at the
5 various columns within this table you can make
6 estimates of the net merchantable volume.

7 Q. And cull being what?

8 A. The rot, decay in the middle of the
9 tree.

10 Q. Thank you.

11 A. And you go through those tables and
12 put together some averages for the various species
13 involved for the species within a given coertype, you
14 come up with such factors as 1.43 for softwoods and
15 1.59 for intolerant hardwoods. What that means is if
16 you had 1.43 cubic metres gross total volume out there
17 in the forest, when you apply this factor in the
18 simulation that means that this one cubic metre net
19 merchantable available for producing product.

20 Q. And the 1.43 is something then which
21 was calculated for the purpose of this simulation?

22 A. That is correct.

23 Q. And it is something which is
24 calculated as the utilization factor for the softwood
25 coertype?

1 A. That is correct.

2 Q. And coming up with that particular
3 average, did you look at a number of softwood species?

4 A. That is correct. We looked
5 specifically at the jack pine and black spruce species
6 which are the two species that have been harvested to
7 the largest volume.

8 It should be recognized that we can adjust
9 these factors in the simulation to recognize
10 improvements in utilization and I have given a simple
11 example at the bottom. If, for example, you have a 10
12 per cent increase in the mill recovery rate; that is,
13 they can produce more product for a given cubic metre
14 that goes into the mill, then what would do if you are
15 recognizing this in the simulation and you are looking
16 at the softwood covertime, to produce the 1.43 factor
17 by 10 per cent to 1.3.

18 Q. I understand that you have got some
19 documents that will take the Board through sort of an
20 explanation of how those changes in utilization factors
21 can affect the amount of gross total volume of wood out
22 in the bush that is required?

23 A. That is correct. The reason we are
24 spending a bit of time on this factor is because it is
25 a very big factor. It can dramatically affect the

1 results of the simulation.

2
3 Q. Take your time going through these.

4 A. What we have here up in the pictures
5 is the tree out there in the bush, gross total volume
6 and we are looking at the softwood coertype and,
7 therefore, in this example we have 1.43 gross total
8 volume units out there in the forest standing waiting
9 to be harvested. We apply the 1.43 factor that I
10 previously described and, therefore, you end up with
11 1.50 net merchantable volume units, that is the stump,
12 the top and the cull have been taken away from this
13 tree.

14 We then assume for this discussion a
15 relative mill recovery rate of 50 per cent. This unit
16 of net merchantable volume goes into the mill and comes
17 out the other end as product. And in this example we,
18 therefore, have 0.5 units of product; that is, the one
19 unit of net merchantable volume times 50 per cent mill
20 recovery rate gives you half a unit of product.

21 If your objective is produce the same
22 amount of the product but you improve the mill recovery
23 rate by 10 per cent; that is, the 50 becomes 55 per
24 cent, therefore, to produce that amount of product with
25 this improved mill recovery rate you need less

1 merchantable volume, 0.9 units opposed to 1.0 units up
2 here. And, therefore, to obtain 0.9 net merchantable
3 units of volume you require less gross total volume
4 from the forest. The net effect is you cut less
5 hectares.

6 If you in this discussion not improve of
7 the mill recovery rate by 10 per cent but also improve
8 utilization within the bush by 50 per cent and your
9 objective is still to produce the same amount of
10 product, therefore, with the 55 per cent mill recovery
11 rate you still require 0.9 net merchantable volume
12 units to produce that product but, again, because of
13 the improved utilization between this point and this
14 point, you need even less gross total volume units.
15 That is the 1.43 has moved to being 1.29 to being 1.23.

16 Q. Mr. Gordon, can you -- I am sorry, I
17 see that you are going to deal with what I was going to
18 ask about. You just continue.

19 A. Conversely, if you harvest the 1.43
20 gross total volume units, you have the 5 per cent
21 increase in utilization within the bush, this factor
22 instead of 1.0 is now 1.5 and you have the improved
23 mill recovery rate instead of 50 being 55 per cent,
24 then from that same volume that we initially started
25 with on the previous overhead you can produce more

1 product, .58 as opposed to .5, an improvement of
2 approximately 15 per cent.

3 Q. I understand that you are going to
4 explain, in a general way, how one would go about
5 improving utilization either in the bush or improving
6 mill recovery rate?

7 A. Yes. I would like to point out that
8 in no way am I an expert in this area. This is based
9 on discussions with some other people in the Ministry.
10 As well, I would like to also point out that while
11 these are options, you can only consider them if they
12 are cost effective and you can make the capital
13 investments it may be necessary to do so.

14 Q. That's 284C.

15 A. In the bush, what you can do is
16 harvest a greater proportion of the tree that's out
17 there and two ways of doing that is to produce a
18 smaller -- leave a smaller top in the bush, bring more
19 of the stem of the tree to the roadside and, as well,
20 you can cut lower stumps. Two very simple reasons.

21 When you get the wood to the mill, if you
22 switch your mill over to higher yield pulping
23 processes, then you can increase your mill recovery
24 rate and usually this is very capital intensive and it
25 is subject to market conditions because sometimes when

1 you change to a different pulping process, the product
2 that you can produce will be different or slightly
3 different and, obviously, you can only do that if the
4 market is available.

5 Within saw mills, you can use computers,
6 electronic optimizers so that you are cutting the log
7 that's going through the saw mill in the most efficient
8 manner and getting the greatest return. And, again, a
9 lot of this equipment costs money and so, therefore,
10 you must be making fair returns before you can afford
11 such investments.

12 And, as well, it sounds fairly simple but
13 again you have to be able to afford it, you can saw
14 more actively and you can use narrower saw blades. So
15 if you are using a narrower saw blade you produce, for
16 example, less sawdust but more lumber.

17 I am looking at the additional handout,
18 No. 284D and I am not going to go through this table in
19 detail, just a couple of lines. It may not have been
20 readily apparent in reading the panel statement and I
21 just want to bring this to your attention and it will
22 come up later when we discuss each individual scenario.

23 But we have a scenario No. 2 where this
24 is an initial demand of this volume, we assume it grows
25 over a number of years --

1 Q. This volume being 16.9?

2 A. Right. We assume that it grows at
3 1.5 per cent over 30 years and, therefore, we have a
4 new demand of 26.4. And, again, I will be coming back
5 to these numbers later. And in this scenario we
6 assumed no utilization improvement. So therefore the
7 net demand at year 30 and thereafter was 26.4. there
8 is no difference between this number and this number,
9 the new demand and the net demand.

10 However, in scenario No. 1 we have the
11 same initial demand of 16.9 as in scenario No. 2, we
12 have the same demand increase of 1.5 per cent over 30
13 years giving you the same demand at 26.4.

14 In that scenario we assumed a utilization
15 improvement, on overage, of 12.5 per cent. This factor
16 interacts with this factor and, therefore, there is a
17 net demand which is slightly lower, 23.1 which is
18 something to be aware of because it is not readily
19 apparent in the panel statement.

20 Q. If you would now go to page 285, Mr.
21 Gordon.

22 A. The previous two factors that I
23 discussed are relating to the harvest depletion rate;
24 that is the demand factor and the utilization factor.
25 We have depletions for a number of other reasons that

1 Dr. Osborn explained and one of the other major
2 depletions is fire losses, due to fire.

3 What we did there was we reviewed
4 Ministry of Natural Resources burn statistics for the
5 past 30 years and based on that review we assumed an
6 average burn each year and we used that in a
7 simulation.

8 We assumed, however - and this is an
9 assumption - that with better access, improvements in
10 detection technology, et cetera, that when there was no
11 old forest left in the simulation there would be a
12 reduction in burn losses by 50 per cent.

13 Q. Could you explain why those -- better
14 access was assumed to have an effect on fire loss?

15 A. Well, there's no question that one of
16 the ways that we do get to fight fires and get to the
17 fire is by helicopter. Also, by having -- as we are
18 accessing the old forest we will have more roads out
19 there and, therefore, crews driving to the fire will be
20 able to get to it.

21 And, as well, while potentially they may
22 start more fires, there will also be more people in the
23 bush and they will detect fires and, therefore, by
24 potentially by reporting those fires we can get to
25 those fires earlier and stop them before they spread

1 too far.

2 Q. I understand that you did not assume
3 that there would be a reduction in fire losses until
4 the entire old forest had been depleted; is that
5 correct?

6 A. That is the basic assumption and I
7 will be coming back to that when I go through the
8 different scenarios because we do modify that as we go
9 through each scenario. But that basic assumption means
10 that we assume that while there is an old forest out
11 there and when we get to the scenarios you will see
12 that that last 50 to 60 years, that the burn rate will
13 continue as per now.

14 Q. And in terms of technology, can you
15 give the Board some indication of the technology that
16 you are referring to which leads to the assumption
17 made?

18 A. Well, I think we have to recognize
19 that the Aviation and Fire Management Service and the
20 fire detection equipment that we have in Ontario is
21 basically a leading edge and it is recognized as being
22 very good across the world. And we have such things
23 right now as lightning detectors whereby having a
24 number of pieces of equipment out there we can detect
25 where lightening has struck. And, of course, by doing

1 that, therefore, estimate what the potential is for
2 fire to start.

3 There is no question over the next 50
4 years, the next half a century that there will be
5 continuing improvements in that area, and the critical
6 thing is to detect the fire as quick as possible so
7 that you can get there before it becomes large.

8 The other major depletor of hectares out
9 there is due to insect and disease.

10 Q. And now you are now looking at page
11 286, for the record--

12 A. That's correct.

13 Q. --of the witness statement?

14 A. As Dr. Osborn pointed out, relative
15 to spruce budworm, we depleted the area of the balsam
16 fir working group in the first 20 years of each
17 simulation relative to the softwood coertype. The
18 other major pest that we dealt with relative to the
19 softwood coertype was root rot, and we made allowances
20 for root rot.

21 Very often if you are out there in the
22 bush you can be walking through a black spruce, it is
23 perhaps 120 years old and you will see that a lot of
24 the trees are lying on the ground, the reason being the
25 wind has come along and knocked some of them over and

1 usually they break off at one foot above the ground, it
2 is because of root rot.

3 For the intolerant hardwood coverytype we
4 make deductions to recognize the impact of hypoxylon
5 canker in poplar and dieback relative to white birch,
6 the other species involved in the intolerant coverytype.

7 Q. Can you just explain briefly what
8 those two things are?

9 A. Basically hypoxylon canker is a
10 species of fungus that affects the stem of poplar and
11 over time will kill the tree. And dieback, you can
12 note that in white birch trees and you will see that
13 the crown of the tree, the extreme branches on the
14 outside will lose their leaves and slowly the tree will
15 die back.

16 Again we made a similar assumption
17 similar to fire losses. We assumed after the old
18 forest is completely depleted in the simulation that
19 pest losses would be reduced by 50 per cent. And why
20 do we make that assumption? Usually anything that's
21 younger and growing quicker is more vigorous and able
22 to withstand disease. I think it is the same with
23 humans.

24 And, as Dr. Osborn pointed out yesterday,
25 and with the fire loss factor, these losses were

1 prorated across all age-classes in proportion to the
2 area of the age-class that was in the simulation at
3 that time.

4 Q. And can you just advise the reason
5 that the losses for pest and for fire were prorated
6 across all age-classes?

7 A. We had no data to convince us to do
8 otherwise and, therefore, a very simple way, it was a
9 safe assumption.

10 Looking at page 286A, that additional
11 page. For your information, I put together a very
12 simple summary of the relative depletion rates of
13 harvest and fire and pests. I am just trying to show
14 you the magnitude of those losses relative to each
15 other. And, again, what I am showing you is just the
16 numbers for the first five years of the simulation on
17 average.

18 When you look at the softwood scenarios,
19 in the simulations it varies from scenario to scenario.
20 I will come back to that later, but usually we are
21 harvesting about 700,000 hectares every five years. In
22 the first five years you can see that fire losses are
23 estimated to be around 340,000 hectares and,
24 surprisingly, pest losses are larger than fire losses,
25 590,000 hectares.

1 So you can see in the first five years of
2 the simulation 57 per cent of the depletion is due to
3 fire and pests and only 43 per cent is due to
4 harvesting.

5 In the intolerant hardwood covertime
6 scenarios it goes even further, 77 per cent -- 75 per
7 cent of the depletion losses in the first five years
8 are to fire and pests and only 25 per cent of the
9 depletion losses are due to harvest.

10 Those are the factors we used in these
11 simulations and very often you have heard that one
12 third of the forest is harvested by harvesting
13 equipment, one third by fire, and one third by pests.
14 These are the factors how they were calculated in our
15 simulations.

16 In my estimation, this factor here, losses
17 due to pests, is probably an overestimate, but based on
18 the reference we were using - and it was the only
19 reference available - we just went with the numbers
20 that we got out of that document.

21 Q. That document is the document
22 referred to at the very top of the list, the first item
23 under pest losses?

24 A. In actual fact, to be very clear,
25 while some of the basic summary data is in that

1 document, the detailed information that we needed to
2 make our decision on was in a background document.

3 Q. To that report?

4 A. To that report.

5 Q. Thank you.

6 MR. MARTEL: Can I ask a question. I am
7 amazed at the figures.

8 MR. GORDON: These are five-year figures.

9 MR. MARTEL: Yes, but I am still amazed.
10 Just in percentage terms, it is 75 per cent roughly of
11 the hardwoods are lost every five years from fire or
12 from pest and fire.

13 MR. GORDON: No, again --

14 MR. MARTEL: Or did I just read it wrong?

15 MR. GORDON: Perhaps I wasn't clear
16 enough. Within the simulation, the number of different
17 types of examples take place every five years, okay.
18 We have three basic examples; fire, pests and, of
19 course, harvest.

20 MR. MARTEL: Right.

21 MR. GORDON: Within the first five-year
22 period, on average, that is what happens in that
23 five-year period. When you look at just the total area
24 that's depleted, not the total forest, just the area
25 that's depleted, 75 per cent of that depletion was in

1 the simulation in the first five-year period because of
2 fire and pests in the intolerant hardwood coertype.

3 And we agree with you, but we had nothing
4 better to go with. We agree and we recognize that it
5 may be on overestimate, but we decided we wouldn't
6 arbitrarily change that number.

7 MR. FREIDIN: Q. And you are referring
8 here to the intolerant hardwood species as opposed to
9 tolerant hardwood?

10 A. That's correct. In our analysis we
11 did not look at intolerant hardwoods which are mostly
12 in southern Ontario and compose a very small proportion
13 of land base.

14 Q. And the majority of the intolerant
15 hardwoods that make up your intolerant coertype, are
16 what species?

17 A. There are only two species involved
18 here, poplar and white birch. About 67 per cent, two
19 thirds of it is poplar and one third of it is white
20 birch.

21 Mr. Martel, while I have said they are
22 overestimates, we shouldn't discount them
23 because, for example, I was talking to an FMA forester
24 and he made the comment to me that the major harvester
25 on his unit, in his opinion, was pests. So it depends

1 where you are in the province.

2 MR. MARTEL: It is such a startling
3 figure and it just jumps out at you.

4 MR. GORDON: So that's why when Dr.
5 Osborn was talking, while the tree planting is very,
6 very important in establishing the new forest, we must
7 be very cognizant of the losses due to fire and pests.
8 Perhaps by looking at them we can extend the old
9 forest.

10 Mr. Freidin, can I take a break?

11 MR. FREIDIN: Would this be an
12 appropriate time for a break, Mr. Chairman?

13 THE CHAIRMAN: Upon request, yes. 20
14 minutes.

15 MR. GORDON: Thank you.

16 ---Recess at 9:45 a.m.

17 ---Upon resuming at 10:15 a.m.

18 THE CHAIRMAN: Be seated, please. Thank
19 you.

20 Just a second, I think I have lost
21 something to write with. Sorry, go ahead.

22 MR. FREIDIN: Q. Mr. Gordon, perhaps you
23 can then proceed with the discussion of the assumptions
24 in relation to the inputs.

25 MR. GORDON: A. Yes, I am going back to

1 one of your observations, Mr. Martel. You noted how
2 high this percentage was relative to pest losses for
3 intolerant hardwoods. One of the reasons that
4 percentage is so high is that in relative terms the
5 harvestry, in the intolerant hardwoods is low, so if we
6 were harvesting more in the intolerant hardwood forest
7 then that percentage would be much lower.

8 And, as well, relative to these factors,
9 while we have made our best estimates internally with
10 with MNR, we did it touch base with experts and asked
11 for their opinion on our assumptions and they would not
12 give us anything better, they could not give us
13 anything better.

14 Now, at page 287 of the panel statement,
15 as Dr. Osborn pointed out yesterday, we made some
16 assumptions relative to a factor we call zone-outs and
17 zone-outs are areas that are not available for harvest.

18 And what we assumed was that for every
19 hundred hectares of old forest, the area in green here
20 that is harvested, an additional five hectares is not
21 available because it is in reserve - it may be a number
22 of hectares around a lake or whatever - but it is not
23 available for harvest. And, as well, we assumed,
24 relative to the hundred hectares that are harvested in
25 the old forest, 15 hectares could not be harvested

1 because they were considered inoperable.

2 What do we mean by inoperable? They could
3 not be harvested perhaps because of slope conditions,
4 they were too steep for harvesting equipment. They may
5 have been flat but the trees may have been too small.
6 There may not have been enough volume on those hectares
7 of old forest.

8 And, as well, we must recognize that in
9 these simulations we included all of the production
10 forest hectares within the area of the undertaking and
11 while we did not do specifically an economic analysis,
12 this inoperability factor recognizes, to some extent,
13 that there will be some hectares that are too far away
14 from the mills.

15 And also you will have isolated
16 situations, for example, where you are harvesting up to
17 a river or whatever and there may be a small stand
18 across the river and it is just not economic to go and
19 get those cubic metres across the river. And so,
20 therefore, this would be included in this inoperability
21 factor.

22 MRS. KOVEN: When you assign an area for
23 harvest to a company, do you make this adjustment
24 factor, or do you do an adjustment within a hundred
25 acre area as opposed to adding an additional 20 per

1 cent as being unuseable?

2 MR. GORDON: Okay. No. 1, just to be
3 clear, we usually don't assign an area for harvest what
4 we do is we give approval through the licensing process
5 to go and harvest, whether we draw up the plan or they
6 draw up the plan.

7 Let's say, for example, that we approve
8 for harvest a stand that's allocated and approved for
9 harvest in a management plan. They may be able to
10 identify - they may be able to identify at the time or
11 before the plan is approved, for example, say the 15
12 per cent in this specific stand, the reason being the
13 15 hectares of whatever is all in one corner, and if
14 they can do that, it will show then because that may
15 affect some wildlife considerations.

16 So, therefore, the wildlife manager will
17 recognize that this portion of stand may not be
18 harvested and will take that into account when he or
19 she is prescribing certain things relative to corridors
20 or reserves for the wildlife.

21 Very often though we have to recognize in
22 Ontario that we are dealing with a broken terrain and
23 terrain changes dramatically within a hundred hectares.
24 So very often they can't specifically identify the 15
25 hectares and so really sometimes what will happen is

1 you don't identify the 15 hectares but they show up
2 after the area is harvested.

3 It would cost too much money to
4 specifically identify the half hectare that is here or
5 the three hectares that is over here that can't be
6 harvested.

7 But, in general terms, someone who is
8 doing this allocation may make comments like that and
9 make people, for example maybe members of the planning
10 team, aware that there may be some mosaic of inoperable
11 areas within the area that's allocated.

12 MRS. KOVEN: You would agree then that
13 adding this 20 per cent addition is a conservative
14 factor in this analysis? I mean, you always seem to
15 go in that direction.

16 MR. GORDON: To be candid, it is our best
17 estimate and I believe it is. I can't say if it is was
18 conservative or optimistic.

19 It has been my experience working on the
20 Steel River Crown, management unit that 5 per cent
21 relative to reserves is reasonable and looking at other
22 units and talking to other colleagues that's
23 reasonable.

24 Again, working on the Steel River Crown
25 Management Unit, 15 per cent for inoperability is

1 reasonable. On the management unit a much larger
2 management unit adjacent to the Steel River Crown
3 Management Unit in Terrace Bay District, the company
4 that used to be there actually did a lot of
5 photointerpretation work and, as well, some ground
6 cruising and they came up with a specific factor of 12
7 per cent, relatively close to 15 per cent.

8 Because I haven't worked in northwestern
9 Ontario or in the clay belt, northeastern Ontario, I
10 touched base with a planning specialist in Kenora and
11 in Timmins and asked them about those two factors and,
12 in general terms, they agree with them.

13 So I believe that they are reasonable.

14 MRS. KOVEN: You could have made the size
15 of that area 80 hectares--

16 MR. GORDON: Yes, I could have.

17 MRS. KOVEN: --instead.

18 MR. GORDON: That's correct.

19 MRS. KOVEN: Is all I'm saying.

20 MR. GORDON: Yes, yes.

21 MRS. KOVEN: Because you are really --
22 well, there is a different way of looking at the size
23 of the forest by looking at 120 instead of 80 hectares.

24 MR. GORDON: The ratio would still be
25 roughly the same.

1 MRS. KOVEN: But the size of the area for
2 harvest would be quite different.

3 MR. GORDON: Yes.

4 MR. FREIDIN: Q. If I could just ask you
5 a question. If you are able to answer this, please do.

6 When in a particular timber management
7 plan - and we are down at the management unit level
8 which I understood is what you were dealing with, Mrs.
9 Koven - when you determine the maximum area that can be
10 harvested or depleted, the maximum allowable depletion
11 area, does that end up being identified on a map?

12 MR. GORDON: A. Yes.

13 Q. If within that area during the
14 planning process an area of concern is identified, if
15 that area of concern is identified or dealt with by
16 putting in a reserve around a lake, as you indicated -
17 let's say it is one acre - do you add another acre that
18 the company can harvest, or does the company now have
19 available for harvest in that five-year period, if
20 start out with a hundred acres, 99 acres?

21 A. That is correct.

22 Q. Thank you.

23 A. And with the zone-out area
24 assumption, we assumed that the 120 hectares was
25 depleted within the simulation from the oldest

1 age-classes. And why do we make that assumption?

2 Usually when we are doing our allocation
3 when we are cutting wood, we are tending to cut the
4 oldest age-classes, the green area, and it is at that
5 time that we identify in the adjacent areas or within
6 those allocations the areas that are reserves and that
7 are inoperable and, therefore, they are in the oldest
8 age-classes.

9 We could have - and end up with
10 relatively similar result in our scenarios - we could
11 have made a deduction of 5 per cent in year zero or a
12 deduction in 15 per cent and it would have affected the
13 outcome to some extent because of some other
14 interactions, but we feel that this basically follows
15 what happens in the field.

16 Turning to page 288 of the panel statement
17 looking at that 100 hectares that was harvested, as Dr.
18 Osborn pointed out, we also make an assumption relative
19 to roads and landings. It is a commonly used deduction
20 of 5 per cent that we also assumed in our simulation.
21 So, therefore, for the 100 hectares that are harvested,
22 only 95 hectares are available to develop a new forest
23 stock, to grow a new forest.

24 MRS. KOVEN: And the amount of wood that
25 is harvested to create the roads and landings, is that

1 taken into consideration in year one, or is the amount
2 so shall that it doesn't matter?

3 MR. GORDON: No, no. In the simulation
4 to meet demand, in a five-year period, the line that
5 comes off this five hectares, as well as the 95
6 hectares, goes towards that demand and, of course,
7 that's the way it works out there in the bush.

8 We are now moving onto the inputs that
9 specifically deal with renewal and this is on page 289
10 of the panel statement and this deals with regeneration
11 levels. As I am going through this overhead here I
12 would like to draw your attention again to the
13 different classes of new forest.

14 We have extensive new forest where there
15 is natural regeneration, basic new forest, Level 2,
16 with the largest category being seeding; but it also
17 includes modified harvest cutting and scarification;
18 intensive being planting and elite being planting with
19 genetically-improved trees.

20 Relative to areas that are going to be
21 planted, intensive plantations and areas that are
22 basically going to be seeded - whether it be through
23 aerial seeding or modified harvest cutting - again we
24 have to make some assumptions. Year zero of our
25 projection was 1986. We assumed in the simulations

1 that for the first five years in the simulation we will
2 continue to treat at a level that we treated at in
3 1986-87.

4 So we assumed in the simulation there
5 will be no increase in the planting and seeding levels
6 for the next five years. Again, in the simulation.
7 And, as an example, if you look at the northwest region
8 and the northeast planning region, we are presently
9 planting about 60,000 hectares. We then assumed after
10 that, after the first five years in the simulation that
11 there would be increased levels of renewal and the
12 numbers we assumed were from the 1991 Implementation
13 Schedule levels.

14 Now, what does that mean in relative
15 terms to what was going on in the first five years in
16 the simulation. When you look at planting again in the
17 northwest and northeastern planning regions, this base
18 assumption is that from the second five-year period of
19 the simulation and thereafter we would be planting
20 80,000 hectares versus 60,000 hectares, an increase of
21 approximately 30 per cent, 80 over 60.

22 Once you inputted into the model these
23 numbers you had so many hectares that had been depleted
24 that were still available for regeneration. For those
25 remaining hectares we assumed that they would

1 regenerate naturally. And, as you would recall,
2 therefore, they grow at a rate slower than the old
3 forest.

4 We assumed that we did not initially
5 plant any elite plantations, we did not plant any
6 genetically-improved stock. And this discussion I have
7 just gone through was about the softwoods coertype.

8 We continue to keep things simple
9 relative to the intolerant hardwood coertype. We
10 assumed that all hectares that were regenerating would
11 grow as extensive plantations. That is natural
12 regeneration. In other words, we would not be
13 investing money in regeneration relative to the
14 intolerant hardwood coertype.

15 And, for example, when you cut poplar it
16 tends to sprout out from the roots that are close to
17 the top of the soil and suckers, so it comes back "for
18 free".

19 THE CHAIRMAN: Mr. Freidin, is there an
20 error in the next paragraph when it refers back to
21 Document 42, which seems to be a yield curve.

22 MR. FREIDIN: I don't believe it is an
23 error. Document -- 279, Mr. Gordon.

24 MR. GORDON: If you go to the following
25 page, page 280 which is part of that document, that's

1 where I make the reference again to the intolerant
2 hardwood coertype and again the new forest stands will
3 come back as extensive stands and, therefore, it was
4 assumes that they would grow at a rate equivalent to
5 how the old forest grows and that's what the reference
6 meant.

7 THE CHAIRMAN: So that refers to the last
8 paragraph on page 280; is that correct?

9 MR. GORDON: That's correct.

10 THE CHAIRMAN: Thank you.

11 MR. GORDON: So again this is the base
12 assumption relative to regeneration levels. And as you
13 can see in the first five years we assumed that we
14 would continue to treat at the present level and then
15 for every five year period in the remaining; i.e.,
16 the remaining 95 per cent years, we assumed that we
17 would treat 1991 Implementation Schedule levels which
18 are somewhat higher than our present treatment levels.

19 We are now in Document No. 52, jpage 290.
20 As Dr. Osborn pointed out yesterday, while we plant
21 areas they may not grow as expected, they may not grow
22 along the planting yield curve and so, therefore, we
23 have to make some assumptions relative to assignment or
24 to reassignment.

25 In the softwood coertype, those areas

1 that were planted; i.e., intensive plantations, we
2 assumed that they would either grow as intensive, elite
3 or basic stands and we assumed that 90 per cent of the
4 areas that we planted would grow along in the yield
5 curve for planted stands, 5 per cent elite, and 5 per
6 cent basic.

7 For areas that were initially established
8 as basic, and generally we are talking about seeded
9 areas, we assumed that they would grow either as basic,
10 intensive or extensive and the relative portions were
11 80, 10 and 10 per cent respectively.

12 So by making that assumption, areas that
13 were generally seeded we assumed that most of those
14 areas would grow along the seeding -- planting seeded
15 seeded curve and 10 per cent would grow a little better
16 and 10 per cent a little less.

17 Areas initially established as extensive,
18 that is the area where we originally didn't plan to do
19 anything, they were coming back naturally, we assumed
20 that 50 per cent of those areas would actually grow on
21 the natural regeneration yield curve and 50 per cent
22 would grow a little better. And one of the reasons we
23 made that decision is that one of the major depletion
24 types is fire and a lot of the areas that are burned
25 over we would be leaving to come back naturally and

1 there is no question that a significant proportion of
2 those areas would come back with very good yields.

3 Intolerant hardwood coverytype. Again we
4 kept it simple, there was no reassignments. Everything
5 started out as extensive natural and stayed on that
6 curve.

7 I suppose if you look at these numbers
8 closer you might question this 90 per cent and are you
9 assuming that when we plant our areas 90 per cent are
10 going to do well, and if you were to ask me that 10
11 years ago I wouldn't be able to stand in front of you
12 and say that. But there have been real improvements in
13 our stock handling abilities, in our storage abilities
14 and, as well, based on my observations, there have been
15 improvements in our survival rates and we tend those
16 trees that are surviving, then it is reasonable to
17 expect such assignment levels.

18 And, for example, in Manitouwadge when I
19 was working in Terrace Bay District, when I first
20 showed up we stored in a root cellar and during the
21 spring they would heat up over time and just before I
22 left Manitouwadge we had spent \$500,000 on a
23 computerized refrigerated building to store the trees.
24 So, therefore, when the trees are going out into the
25 field and being planted they are in better condition.

1 The other major input assumption that we
2 have to make before we can run the model relates to
3 barren and scattered lands and those basically are a
4 category of land with a relatively low stocking level.
5 Sometimes I think the name is a funny name, barren and
6 scattered lands. Really there should only be one term
7 there, I think it would be simpler to understand.
8 Perhaps we can say they are not free to grow lands.

9 When you enter the production forest land
10 base at year zero it's a component of that land base in
11 the FRI data base that is identified as being barren
12 and scattered, not free to grow.

13 We assumed in this projection that that
14 number remained constant and, therefore, when you look
15 at the northwestern softwoods and the northeastern
16 softwoods, in very general terms, 10 per cent of the
17 initial land base which was entered was barren and
18 scattered and we assumed - this isn't happening out
19 there - but we assumed it stayed as barren and
20 scattered.

21 So what would happen is that in every
22 five-year period in the simulation a number of hectares
23 will be depleted because of fire losses, pest losses
24 and harvesting and those hectares for a moment in the
25 simulation became barren and scattered and that number

1 was added to this initial number of hectares that was
2 barren and scattered. We then told the computer at the
3 end of that five-year period how many hectares were
4 going to come back as being planted, seeded, et cetera
5 and then we allowed and ensured that this number
6 remained at barren and scattered and manipulated the
7 natural regeneration number to take that into account.
8 So this number stayed constant.

9 I believe Dr. Osborn showed you this
10 overhead yesterday -- I know he did, and basically this
11 is a summary of the model inputs. So I have gone
12 through the model inputs and the computer is now
13 simulating and that's found on page 292 and in list
14 form.

15 For your reference, on page 293, is a
16 list of the inputs and, as well, we have tried to
17 reference the document numbers and in very brief form
18 discuss the values. Again, what I have described to
19 you are the base inputs and they did vary between
20 scenarios.

21 MR. FREIDIN: Q. And when we look at
22 that particular summary of base model inputs, are you
23 able to just identify in that list the inputs which in
24 fact would change?

25 MR. GORDON: A. That's correct.

1 Q. From scenario to scenario?

2 A. The land base remains constant, the
3 age of death, rotation age remain constant, yield curves
4 sometimes varied between scenarios, the demand
5 sometimes varied between scenarios, the utilization and
6 mill recovery factor sometimes varied between
7 scenarios, and the fire and pest loss factors sometimes
8 varied, and the regeneration levels. And what I will
9 do is I will summarize that over here.

10 So the factors that varied were demand,
11 utilization and the mill recovery factor; fire losses,
12 pest losses, the amount of regeneration work that was
13 done and yield curves relative to regeneration. So I
14 will leave that up there.

15 You have got to recognize as I go through
16 these scenarios, and I will explain where they have
17 changed, that there are adjustments to these base
18 inputs I have just described.

19 As Dr. Osborn showed you yesterday, there
20 are a number of model outputs that you can get from
21 each simulation and the one that we are interested in
22 for demonstration purposes for display purposes is the
23 growing stock, whether it be old forest or new forest.

24 What I am now going to do is take you
25 through the five scenarios, scenarios 1, 2 and 3 deal

1 with the softwood coverytype and scenarios No. 4 and 5
2 deal with the intolerant hardwood coverytype, the poplar
3 an white birch.

4 The scenario with the least adjustments,
5 no adjustments relative to those base inputs is
6 scenario No. 2, so I believe it would be best to do
7 that one first to see what happens when we just use the
8 base inputs.

9 Q. That particular scenario's
10 description is in Document 57, commencing at page 300
11 of the witness statement.

12 A. As you can see looking at page 300 --

13 Q. And 300 is one of the pages which was
14 in Exhibit No. 146.

15 A. And in the handout we included an
16 undated page 300 with three boxes at the bottom. On
17 page 300 in your panel statement the three boxes are
18 not present and we have included them in the updated
19 package. Those boxes will show up as an update related
20 to the five scenarios. Again, to clearly show the
21 interaction of demand and utilization.

22 THE CHAIRMAN: Mr. Freidin, is it
23 absolutely necessary, in your opinion, to go through
24 all of the five scenarios as opposed to going through,
25 say, two of them to show us what the variations may be?

1 I mean, the point is: You could do 25
2 scenarios if you wanted and change the variables as
3 many times as you want. Is there much value in showing
4 us specifically five of them, if we can bear in mind
5 that the numbers are going to change and the results
6 are going to change if some of the variables change.

7 I mean, what is the purpose of going
8 through the five?

9 MR. FREIDIN: I think --

10 MR. GORDON: I think what we have tried
11 to do is minimize the number of scenarios by
12 aggregating the planning regions together as northern
13 Ontario and No. 2 we have picked ones that show some
14 differences and while we are going to talk about five,
15 I don't think it will take us that long to get through
16 and, more importantly, by going through the five I
17 think you will see the logic behind our conclusions.

18 But I believe it won't take that long.

19 MR. FREIDIN: Do you have some concern as
20 to whether they will see the logic of your conclusions
21 if you don't go through the five?

22 THE CHAIRMAN: Or is it your intention
23 when you go through each of the five to go through
24 each of the individual inputs?

25 MR. GORDON: No. Oh, no. All I am going

1 to do is tell you where the inputs have changed from
2 those ones I have described. For example, in scenario
3 No. 2 there has been no changes, so therefore we don't
4 talk very long about that.

5 THE CHAIRMAN: Okay. We will probably
6 waste as much time deciding whether we will hear them
7 all or not, so you might as well proceed.

8 We will keep you at your word about not
9 whatever.

10 MR. GORDON: Scenario No. 2 pertains to
11 the softwood coverytype in northern Ontario. Relative
12 to the base inputs, there were no changes. However, we
13 have added for your information the initial demand was
14 16.9-million cubic metres of softwood across northern
15 Ontario with the 1.5 per cent per annum for 30 years.
16 At the 30 year point and thereafter the annual demand
17 is 36.4 and because there are no improvements projected
18 in the simulation, the net demand is 26.4, the same as
19 the new demand.

20 What happens? I am at page 296. We are
21 looking at the old forest growing stock over time. As
22 you would expect with any forest out there in northern
23 Ontario, any boreal forest in the world, the growing
24 stock in the old forest goes down over time, whether it
25 be for harvest, depletion, fire loss or pests?

1 MR. FREIDIN: Q. Am I correct that this
2 is 301, page 301 not 296?

3 MR. GORDON: A. Yes, excuse me. As you
4 can see in the simulation, approximately 55 years from
5 times zero, from 1986, there is no old forest left
6 except for what has been tied up in reserves,
7 zone-outs, et cetera.

8 With the new forest regeneration levels
9 that are assumed in the base assumptions - we are now
10 looking at page 302 - the new forest growing stock
11 starts to build up over time as the old forest is being
12 depleted. After the old forest is depleted, we then
13 start cutting the new forest. And relative to the
14 regeneration levels assumed and the 56 per cent
15 increase in demand, the new forest as projected in this
16 simulation cannot support that demand.

17 We now skip page 303 and turn to page 304,
18 shown in another form. We have the increasing demand
19 at 1.5 per cent per annum for the first 30 years and
20 then in the simulation it remains constant. This level
21 is 56 per cent higher than it is right now and, as you
22 can see, the old forest meets that demand for 55 years.
23 The new forest is then harvested to meet that demand
24 and does not last, except for 20 years and, therefore,
25 at that point in time we have no forest and what I mean

1 by no forest is no operable forest.

2 There is no question there are older
3 age-classes in reserves and zone-outs and there are
4 younger forests coming up that has been recently
5 harvested.

6 In comparison to that scenario we done
7 another simulation where we have made some different
8 assumptions. We still assumed that the demand increase
9 is 1.5 per cent per annum for the first 30 years and
10 then it is constant. However, we have assumed that, on
11 average, the utilization/mill recovery improvement
12 rates are 12.5 per cent. In other words, we cut fewer
13 hectares to meet that demand.

14 We have also assumed that the yield
15 curves for the basic forest, the seeded forest and the
16 intensive forest, the planted forest will produce
17 yields 25 per cent higher.

18 Q. Just doing the utilization/mill
19 recovery improvements of 12.5 per cent is that an
20 improvement -- a combination of improvement both
21 utilization in the field and mill recovery?

22 A. We haven't specifically identified in
23 the simulation as to whether it is in the bush or in
24 the mill. We have just assumed that some type of
25 improvement will take place. All of the 12.5 per cent

1 could be in the bush or it could be in the mill.

2 Q. Okay.

3 A. We have also assumed that there will
4 be a reduction in fire and pest losses 25 years into
5 the simulation. As you will recall, when there was no
6 old forest left we reduced the losses by 50 per cent;
7 25 years into the simulation we reduce the losses by 25
8 per cent.

9 In this scenario we increase the planting
10 levels by 75 per cent, and what do I mean by that is we
11 increase the planting levels 75 per cent above the 1991
12 Implementation Schedule levels that are targeted.

13 In very simple terms, that's an increase
14 overall of 130 per cent above what they are right now.
15 The initial demand, as in scenario No. 2, is
16 16.9-million cubic metres, because of the demand
17 increase it increases to 26.4, because of the
18 interaction between the demand increase and the
19 utilization improvements, the net demand, it goes
20 through the computer and in year 30 and thereafter is
21 23-million cubic metres annually.

22 We are looking at page 296, looking at the
23 old forest growing stock. Again we see the old forest
24 growing stock going down over time but lasting 10 years
25 longer because of the improved utilization levels, as

1 well, the reduced fire and pest loss.

2 As the old forest is being depleted, the
3 new forest is growing. There is more hectares being
4 planted, therefore, there's more hectares growing at a
5 faster rate and, as well, we have assumed that the
6 actual rates of growth for planted and seeded areas in
7 this simulation are 25 per cent higher than scenario
8 No. 2 and, therefore, in this simulation you can see,
9 as the old forest is harvested, the new forest grows
10 and remains constant and is able to meet the demand
11 over time.

12 So looking at page 298, where you've got
13 both the old forest and the new forest together,
14 although you initially started out with more growing
15 stock in the old forest, because the new forest is
16 growing faster, it is able to meet the increased
17 demand. I believe Dr. Osborn introduced that concept
18 earlier.

19 Q. So the...?

20 A. You have got less capital but the
21 forest is growing quicker.

22 Q. In the years 50 to 65, which forests
23 are you harvesting from?

24 A. In the simulation you are harvesting
25 from the old forest. You harvest the old forest first,

1 once it disappears in the year 65 in the simulation,
2 you then begin to harvest the new forest.

3 Q. Okay.

4 A. Again, a similar graph. We are able
5 to meet the increasing demand from the old forest for
6 the first 65 years of the simulation and then the new
7 forest meets demand from then on.

8 In scenario No. 3 we did something
9 slightly different. While we recognize - and we
10 describe this in the panel statement, in paragraph 94 -
11 we recognize that the potential exists to meet future
12 demands by substituting intolerant hardwoods. And so,
13 therefore, our base assumption recognizes while having
14 a smaller demand increase 1.5 per cent but not over 30
15 years it is over 23 years. There are similar mill,
16 utilization improvements as in scenario No. 1, the
17 yield 34 improvements as in scenario No. 1 and the
18 reduction in fire and pest losses.

19 However, in this scenario, because of the
20 reduced demand uses substitution of poplar and white
21 birch, we in the simulation plant and reduce levels and
22 that way we increase the planting level 10 to 20 per
23 cent above the 1991 target levels.

24 Q. That compares to a...

25 MR. MARTEL: May I ask a question? Your

1 demand increase on page 305 originally, 1.5 per cent
2 per annum for 25 years.

3 MR. GORDON: That's correct.

4 MR. MARTEL: The second sheet is 305 the
5 addendum is 1.5 per cent for 23 years.

6 MR. GORDON: That's correct. That was a
7 mistake, when I put together that sheet I was...

8 MR. MARTEL: Is it just an error? I
9 mean, which one is the correct figure?

10 MR. GORDON: 23 is correct.

11 MR. MARTEL: Okay. Fine, thank you.

12 MR. GORDON: And the reason we assumed
13 the growth rate of 1.5 per cent for 23 years is the
14 scenario was done in conjunction with scenario No. 5
15 where we assumed that the additional fiber that may
16 have been needed; ie., had grown from 1.5 per cent for
17 30 years. That additional fiber would be met by
18 substituting intolerant hardwood. And that will become
19 apparent when we get to scenario No. 5.

20 THE CHAIRMAN: You should also make the
21 correction then to the 24 years under: reduce old
22 forest, fire and pest losses.

23 MR. GORDON: That's correct. It should
24 read year 26.

25 THE CHAIRMAN: I thought it should go

1 the other way.

2 MR. GORDON: No. After year 25, that is
3 year 26 onwards, we assume that the fire and pest loss
4 would reduce 25 per cent from what was entered in year
5 zero.

6 THE CHAIRMAN: So that the new 305 goes
7 to 26?

8 MR. GORDON: That's correct.

9 MR. FREIDIN: The fire losses.

10 THE CHAIRMAN: Right.

11 MR. GORDON: And what does all that mean
12 in terms of the fire and pest loss. We assumed in year
13 zero that we would have a fire and pest loss as for the
14 base assumption. And in the base assumption, as long
15 as there is an old forest out there, those fire and
16 pest losses would continue annually at that initial
17 level.

18 When there is no old forest there, the
19 fire and pest loss dropped by 50 per cent and that was
20 the base assumption. And this scenario, as you move
21 along through time, when you hit year 25, that is in
22 the 26th year, we assume that fire and pest losses
23 would reduce by 25 per cent in that period of time.

24 MR. FREIDIN: Q. Mr. Gordon, just going
25 to that particular document or page 305. As I

1 understand it, what you are saying is there would be a
2 reduction in the fire loss after 25 years?

3 MR. GORDON: A. That's correct.

4 Q. So the first year of the reduction in
5 fire loss by the 25 per cent would occur in year 26?

6 A. That is correct.

7 Q. So the number then, as you indicated,
8 should be year 26?

9 A. That is correct. Looking at page
10 308, you see the effects of all those assumptions on
11 the growing stock out there.

12 Again, the old forest is depleted over
13 time, it lasts a little longer than scenario No. 1
14 because of the reduced demand and the new forest
15 increases as the old forest is harvested and is able to
16 meet the demand over time.

17 Again, you see the old forest lasting on
18 year 70, meeting the projected demand and then the new
19 forest able to meet the demand from then on.

20 Q. The three scenarios that you just
21 referred to then deal with how the old and the new
22 forest will meet demand in relation to the softwoods,
23 the softwood covertypes?

24 A. That's correct. I am now going to go
25 to the two scenarios that deal with the intolerant

1 hardwood covertime.

2 Scenario No. 4 assumes no changes to the
3 base inputs that I described previously. So,
4 therefore, the initial demand of 2.4 grows over time at
5 1.5 per cent per annum for 30 years and thereafter
6 becomes 3.8-million cubic metres and because there are
7 no utilization improvements the net demand is the same,
8 3.8-million cubic metres.

9 Because of the size of the intolerant
10 hardwood forest out there relative to the demand, this
11 forest, when you compare it to the softwood covertime,
12 lasts a much longer period of time. The old forest
13 growing stock lasts well past 75 years, out to almost
14 90 years.

15 The new forest growing stock begins to
16 build up and can meet the projected demand. If you
17 look closely at the lines, as you move out towards year
18 90, 95 and 80 and 100 you can see that the line is
19 still climbing, there is still a slope so, therefore,
20 the new forest is able to meet more than the projected
21 demand, it has continued to appreciate.

22 Q. Page 314?

23 A. That's correct. In summary, when you
24 look at scenario No. 4, the old forest lasts for a
25 significant period of time, 90 years, and then we start

1 to harvest the new forest.

2 Looking at the last scenario, scenario
3 No. 5, deals with the intolerant hardwood coverytype in
4 northern Ontario and we made some changes to the base
5 assumption. We have assumed not only will there be a
6 1.5 per cent increase per annum in demand for the first
7 30 years but, as well, to one of the pulp mills to
8 substitute for conifer, we have assumed that there will
9 be an additional increase of 3-million cubic metres in
10 that, years 5, 10 and 15.

11 We have also assumed an improvement in
12 utilization levels and a reduction in fire and pest
13 losses. So, therefore, the initial demand increases
14 from 2.4 to 6.7-million cubic metres and because of the
15 utilization improvements, the net demand is 6-million
16 cubic metres.

17 Q. And what was the reason, could you
18 just indicate again - I wasn't clear, what the reason
19 for the increase in the demand for intolerant hardwoods
20 was in this particular scenario?

21 A. We made the assumption that besides
22 meeting a demand increase of 1.5 per cent per annum for
23 the mills that are out there right now utilizing poplar
24 that, as well, some of those mills may be able to, in
25 the future, use an ever increasing amount of poplar.

1 Again, as you can see, the old forest
2 lasts for a significant number of years even with that
3 increased demand and one of the main reasons for this
4 in scenario No. 4 a fair proportion of the old forest
5 was harvested by the age of death.

6 So in this case with the increased demand
7 we are catching those trees before they fall down. The
8 old forest still lasts for 90 years, even though we are
9 harvesting more of it.

10 The new forest appreciates over time and
11 is able to meet the projected demand. In this case,
12 however, if you look closely at the lines - and it is
13 difficult to do with the scale of graphs - the graph
14 does not continue to go up but it's horizontal near the
15 end of the projection and that is it can only meet that
16 demand as projected and no more.

17 What do all these scenarios tell us? I
18 believe they tell us a number of important things and
19 this overhead is 319A -- page 319A and basically the
20 words are almost exactly the same as the discussion
21 portion beginning on page 50 in the panel statement.

22 On a macro level there is sufficient old
23 forest to satisfy the increased demand as projected in
24 the five scenarios in the short and medium terms. The
25 old forest can sustain a harvest level of over

1 25.89-million cubic metres beyond the year 2020 to
2 approximately the year 2040.

3 That was our objective in the Forest
4 Production policy to be able to meet a demand of that
5 in the year 2020. The reason we are able to meet that
6 demand is because the old forest is recognized in these
7 simulations.

8 The long-term wood supply can only be
9 assured by increased resource commitments to establish,
10 tend and protect the forest. As you will recall in the
11 two softwood scenarios where it met the increased
12 demand over time, it was necessary to regenerate more
13 hectares, for example, by planting and, as well, it was
14 necessary to have improved yields per hectare and one
15 of the ways you get that is by tending.

16 Improved mill recovery and utilization
17 rates, increasing the use of intolerant hardwood fiber
18 and a larger regeneration effort are some key factors
19 that must be mixed together to sustain harvest levels
20 as projected.

21 Turning to page 320, that is Document 61.
22 What are some of the generic ways of extending the life
23 of the old forest? As I said earlier, you can improve
24 utilization, you can spend money to fight fire and
25 pests. Another alternative, if you want to extend the

1 life of the old forest and you believe it is
2 reasonable -- if you believe it is reasonable, is to
3 reduce demand and, as well, you consider reducing
4 zone-outs, making more land available for harvest, if
5 considered appropriate. And, as well, you can
6 substitute or utilize species that are not being
7 utilized to the full extent right now.

8 When you run out of the old forest,
9 looking at page 321, Document 62: Other ways of
10 extending the life of a new forest. A lot of those
11 ways are similar to extending the life of the old
12 forest. Improved utilization, reduce fire and pest
13 loss, reduce demand, reduce zone-outs, increase the
14 size of the artificial regeneration program, tend and
15 increase yields and, was well, spend money on tree
16 improvement and plant trees that grow quicker.

17 Q. And the tree improvement, does that
18 have reference to the genetically-improved stock?

19 A. That is correct. After making those
20 general points, what are some conclusions we can draw
21 from doing these simulations?

22 We turn to page 323. Most Of the Crown
23 land production forest is in northern Ontario; that is,
24 94 per cent of it and it's within softwood or
25 intolerant hardwood covertypes.

1 This simulation model that we have used;
2 that is, the AWOSFOP for Production Policy simulation
3 model, allows the forest resources group to analyse
4 operational strategies to ensure that we have a
5 continuous and predictable wood supply in the future.

6 And very clearly, these analyses must
7 consider both the old and new forest together. The
8 solution to any long-term wood supply problem is not
9 just to go and plant, it is much more complex than
10 that.

11 Turning to page 324 of the panel
12 statement. On a provincial basis there is sufficient
13 old forest to meet industrial need for the next 50
14 years at the macro level. There is, at this point in
15 time, sufficient time to establish a new forest to meet
16 long-term wood supply needs.

17 However, to establish that new forest to
18 meet projected demands will require a significant level
19 of investment and by doing such simulations, it is
20 possible to identify any problems and develop
21 strategies to offset those problems.

22 Again, I would like to point out that
23 this was a macro level analysis so we are looking at
24 all of northern Ontario at once and there may or may
25 not be specific problems for a given mill within those

1 50 years, but overall, in northern Ontario, as well
2 looking at the planning regions individually, there is
3 a lot of wood out there.

4 Q. Now, Mr. Gordon, I understand that
5 Document 31 in the witness statement is an article or
6 paper written by Dean Baskerville from New Brunswick?

7 A. That is correct.

8 Q. And could you just, in a brief way,
9 indicate to the Board what that document deals with and
10 explain why you have produced it?

11 A. Dr. Baskerville in News Brunswick has
12 summarized a simulation exercise that they have gone
13 through and presents his results. And while he may not
14 have necessarily uses the same model as we did, his
15 results relative to New Brunswick, as compared to
16 Ontario, are very interesting in that he comes to a
17 number of the same conclusions.

18 And as well, of course, the article is
19 written by Dr. Baskerville. So we thought we gained
20 something by comparing some of our findings compared to
21 what he found relate to New Brunswick's long-term wood
22 supply.

23 Q. Does it indicate -- could you in fact
24 describe then the comparisons which you think would be
25 of interest to the Board?

1 A. Looking at page 326 that was handed
2 out in this package, and what have we found through our
3 simulation exercise and what was found out in New
4 Brunswick. I have summarized the findings.

5 No. 1, the natural regeneration of
6 softwoods is not sufficient to renew the forest as
7 rapidly as softwood is being harvested and if you look
8 to Mr. Baskerville's paper, page 5, you will find that
9 he agrees for the New Brunswick condition.

10 The old forest in Ontario can support an
11 expanded harvest level for a number of years and our
12 estimate at the macro level 50 years and, similarly
13 Dr. Baskerville found in New Brunswick that the old
14 forest could sustain a harvest level for a number of
15 years, however, it was for a shorter period of time
16 without any expansion.

17 In our simulation we have assumed that the
18 new forest must be able to produce harvestable volumes,
19 50 to 70 years from now, and in the simulation it does.
20 In New Brunswick the new forest must produce
21 harvestable volumes in 40 years because they will have
22 no old forest.

23 And very clearly we have shown that
24 increased planting effort does increase the potential
25 for long-term wood supply, but does not solve any wood

1 supply problems in the short and medium term and Mr.
2 Baskerville agrees with that on page 10 of that
3 document.

4 THE CHAIRMAN: Are there any conclusions
5 that he doesn't agree with your result?

6 MR. GORDON: He isn't specifically
7 agreeing with us, but his findings are the same as
8 ours.

9 THE CHAIRMAN: Well, is there any area
10 that he differs substantially from what you arrived at?

11 MR. GORDON: No.

12 MR. FREIDIN: Q. Mr. Gordon, can you
13 advise me - the document perhaps that is in the witness
14 statement will speak for itself, and I refer to the new
15 pages that you have added - but can you advise, when
16 Dean Baskerville came to similar conclusions, the
17 conclusions that you have referred to, do you know
18 whether he used a simulation model to come to the
19 conclusions that he did in terms of how to deal with
20 problems or to identify problems and then how to deal
21 with them?

22 MR. GORDON: A. Yes, he did.

23 Q. Do you know whether it was a
24 simulation model identical to the one which is used in
25 Ontario?

1 A. It would not be identical, but I
2 don't know exactly what model it was.

3 Q. Do you know whether the factors that
4 were considered by Dean Baskerville in making the
5 long-term projections in New Brunswick, how those
6 factors that he considered compare to the factors which
7 were considered in your simulations?

8 A. In reading his article, in general
9 terms I would come to that conclusion.

10 Q. The conclusion that...?

11 A. That he was looking at similar
12 factors.

13 Q. And was the purpose of putting in
14 pages 325 through 328 to indicate that similar problems
15 were identified; is that the sole reason for putting in
16 that document?

17 A. That is correct. It was not to
18 identify the magnitude of problems in one province
19 versus other province, but that he had identified
20 similar problems.

21 Q. Does Dean Baskerville's article
22 indicate how to solve the problems which were
23 identified and which you indicate were similar?

24 A. In general terms, yes.

25 Q. Can you advise, does that article

1 indicate how Dean Baskerville believes that those
2 problems could be addressed?

3 A. In general terms, he has said that,
4 yes.

5 Q. Are you able to comment or compare
6 the possible solutions to solve those problems, how
7 they compare in Dean Baskerville's report and the
8 evidence you have given here today?

9 A. That is correct.

10 Q. Could you -- all right. Does he
11 compare them?

12 A. Yes.

13 Q. Are they similar or are they
14 different?

15 A. They are similar.

16 Q. Thank you.

17 MR. CAMPBELL: Mr. Chairman, I don't
18 know -- could Mr. Freidin explain again what the
19 purpose of all of that was in terms of this comparison,
20 what conclusions the Board is expected to draw from
21 that comparison?

22 I am very concerned about this kind of
23 comparison. I am not -- I have to go back and check
24 the CV, but I am not at all persuaded that Mr. Gordon -
25 although competent in his field - is a modeler as Dr.

1 Osborn was.

2 Clearly matters that arise and
3 conclusions of that type are highly dependent on the
4 model and I am not sure whether Mr. Gordon is a
5 modeler, quite a unique skill, and I don't know. It
6 appears to me that Mr. Freidin is trying to attach more
7 weight to the Ontario results because Dr. Baskerville
8 has done something which appears on the surface to be
9 somewhat similar without any opportunity for us to test
10 that proposition through this witness or any other
11 witness that we are going to see.

12 Unless Mr. Freidin is saying that --
13 indicating in this that he intends to call Dr.
14 Baskerville as I gather there was some discussion of
15 earlier in these proceedings.

16 If he's saying that, then I will just sit
17 down and be quiet and I deal with Dr. Baskerville, but
18 I don't think we can deal with it this way.

19 THE CHAIRMAN: We come back to Dr.
20 Baskerville from time to time, Mr. Freidin. Have you
21 made any decision as to whether your side is going to
22 call him yet?

23 MR. FREIDIN: No, sir, we have not. To
24 address Mr. Campbell's point, the purpose of this
25 particular document and the discussion is not so much

1 to say that that a similar problem was identified
2 there; that they have got a problem similar to the one
3 here. It was merely to address a matter which we
4 believe might be of concern and I believe it was raised
5 in a question of yours of Dr. Osborn yesterday as to
6 whether in fact simulation, this kind of modeling, iun
7 a general sense, is used in forestry and I think Dr.
8 Osborn indicated, yes, it is.

9 This document was put in basically to
10 address that type of concern as evidence that yes,
11 indeed, simulation modeling long-term is something
12 which is done in forestry and, therefore - and we put
13 it in, quite obviously, because of that sort of concern
14 so that you would have some idea as to whether this was
15 only done in Ontario it was something really unique or
16 whether it was a standard approach that was taken when
17 you are dealing with forestry.

18 So whether the problems are identical or
19 not as defined by the modeling is not the point. The
20 point is: Modeling is used in other jurisdictions,
21 similar factors are considered when trying to model;
22 you just put the inputs into a different model that
23 deals with these things differently, but you look at
24 the same factors, and some assistance is given to the
25 proponent's case, in my view, but if you look at that

1 article you will see, as outlined perhaps by the
2 documents that the witness has put up, that the
3 problemms which were identified were similar.

4 More importantly, the approach or the
5 things you could do to deal with those similar problems
6 are, again, similar between Dr. Baskerville saying:
7 Here's how I would approach it, these are things you
8 can do and this witness has said: Here are the things
9 you can do.

10 And that's the reason it was put in. But
11 the reasons I didn't take the time to go through the
12 article and show what his graph showed to our graphs,
13 to be quite frank, that's not the point.

14 THE CHAIRMAN: Just a moment, Mr.
15 Campbell.

16 I think, with respect, Mr. Campbell is
17 concerned with the fact that this particular witness
18 has not been qualified as a modeler, so to speak and,
19 as a consequence of that, what weight is the Board to
20 place on the validity of the model used and the
21 validity of the conclusions reached as a result of
22 these particular model runs.

23 MR. FREIDIN: I am not asking you to rely
24 on this witness' evidence to determine the merit: How
25 good the model in Ontario is.

1 Dr. Osborn gave the evidence as to what
2 the model is, how it was prepared and all of the
3 thought processes that went in to create the model. I
4 would ask you to rely on the evidence of Dr. Osborn in
5 that regard.

6 This witness, with his background as to
7 what actually happens in field, a practising field
8 forester, has taken that model and inputs into it,
9 based on his knowledge and his experience augmented by
10 discussions and articles as he has indicated.

11 So I am not -- I think I have said my
12 piece.

13 THE CHAIRMAN: Mr. Campbell?

14 MR. CAMPBELL: Mr. Chairman, with respect,
15 on the face of the documents that we have just received
16 today, pages 326, 327, clearly the purpose of those
17 pages is to determine whether a result that is run in
18 New Brunswick agrees with a result that is run in
19 Ontario.

20 That's what it says.

21 MR. FREIDIN: Well, don't take it for
22 that.

23 MR. CAMPBELL: It agrees with -- well,
24 Mr. Freidin, that is what your document says.

25 Now, what are we left with? We have not

1 seen this before today. And with respect, Mr.
2 Chairman, we are asked: Agree. There is a direct
3 comparison between the two studies and we have
4 absolutely no way of testing whether that comparison,
5 which can only - whether Mr. Freidin intended it that
6 way or not - can only act in the Board's mind to either
7 lend support or not to the Ontario model, it can only
8 act in that way.

9 Do you agree? Oh, it looks good, lines
10 up. I mean, it is the obvious conclusion to be drawn
11 from those page.

12 Now, that's what we have in front of us,
13 that was put in testimony today, we have not seen this
14 exhibit before and, with respect, if we are going to be
15 asked to agree or disagree -- if Mr. Freidin is
16 suggesting that we should agree or disagree, then I
17 think we are virtually entitled to have Dr. Baskerville
18 here to speak to that.

19 MR. FREIDIN: That's not the purpose, I
20 made that quite clear.

21 THE CHAIRMAN: Well, okay. Regardless of
22 whether that is the purpose, Mr. Freidin, I think the
23 Board has indicated almost since the commencement of
24 this hearing that we I think, as a Board, would like at
25 some point to hear from Dr. Baskerville.

1 Now, we do not have subpoena powers I do
2 not think that extend out to New Brunswick. If Dr.
3 Baskerville was within the jurisdiction we would
4 probably request his presence in a more substantial way
5 than I suppose we have the powers to do, but Dean
6 Baskerville has come up in this hearing, in context,
7 and that is an example.

8 At some point I think it is fair to both
9 the Board and the parties, for that gentleman and
10 perhaps some others who have put in fairly important
11 reports and who may be available to attend and testify,
12 to be here. And from time to time we sort of ask you
13 politely whether or not you are intending to call this
14 witness and, up to to now, you have indicated that you
15 have not addressed that matter in your minds.

16 MR. FREIDIN: The matter has been
17 addressed, but no firm decision has been made on it and
18 I would just indicate -- let's assume that a decision
19 is made, you know, as of this afternoon that he would
20 be called. It will not be an easy question to answer
21 as to when it would be appropriate for him to be called
22 in the context of our case.

23 THE CHAIRMAN: Well, I think at some
24 point in time the Board, if nobody else does, is going
25 to request Dean Baskerville to be present.

1 MR. FREIDIN: I think you made that quite
2 clear.

3 THE CHAIRMAN: And whether or not he
4 chooses to attend is another matter. A number of
5 parties have expressed a desire to at least have the
6 opportunity to either ask questions of Dean Baskerville
7 or try to clarify statements made by others about what
8 Dean Baskerville thinks or what his reports mean.

9 He is certainly somebody involved in this
10 process, he is somebody who is alive and able to
11 testify and, therefore, I think it would improve the
12 ability of the parties to address the evidence
13 considerably if he were present at some point.

14 As to exactly when, I am not sure myself
15 when that would be appropriate bearing in mind that you
16 have several more panels of witnesses to deal with
17 evidence and several of those future panels may also
18 deal with Dean Baskerville's reports or other articles
19 or whatever that he has been responsible for. So
20 perhaps at a later stage in the proceedings it would be
21 more appropriate rat.

22 As far as Mr. Campbell's concerns about
23 this particular document, I think the Board is probably
24 in agreement that the way the documents, on the face of
25 it, appear conclusions or the reasonable person would

1 be drawing the conclusion that certain comparisons are
2 being made, and the Board should draw certain
3 inferences from those comparisons.

4 Having said that, I think we can assure
5 Mr. Campbell that we are aware of the concerns and the
6 Board, as you are aware, has the duty to place whatever
7 weight it deems appropriate with respect to the
8 evidence put before it. And, consequently, in view of
9 those concerns, I do not think the comparisons that
10 appear on the face of it will be given much weight by
11 the Board.

12 The documents are in, they are in that
13 form, Mr. Freidin has indicated what purpose the
14 documents were to serve and the Board certainly is not
15 going to necessarily place much weight on those
16 comparisons in the form that they appear.

17 MR. CAMPBELL: Thank you, Mr. Chairman.

18 MR. FREIDIN: Q. Dr. Osborn, could you
19 turn to page 99 -- refer to paragraph 99 of the witness
20 statement which you will find on page --

21 THE CHAIRMAN: Mr. Freidin, how long are
22 you going to be at this point. I will tell you one of
23 the problems.

24 I have to find a way to extend the life
25 of this hearing book which I can do it over the lunch

1 hour.

2 MR. FREIDIN: Well, let's break now
3 because I have about two or three questions for Dr.
4 Osborn before I get into the last area.

5 So I think it is --

6 MR. TUER: Will you take the rest of the
7 day?

8 MR. FREIDIN: Will I take the rest of the
9 day? I don't think so.

10 THE CHAIRMAN: Well, suppose we break
11 until 12:45, that would give us an hour -- or perhaps
12 one o'clock. Do you feel that you could deal with the
13 last topic this afternoon?

14 MR. FREIDIN: Oh yes, no problem. We
15 usually sit until about what, 2:30?

16 THE CHAIRMAN: I would think no later
17 than 2:30 at the outside, because I do not think the
18 bus is running for those who normally went by bus and
19 you are going to have to get out there on your own.

20 MR. FREIDIN: I don't anticipate any
21 problems completing by 2:30 and then I would suggest
22 that, if we finish a little before that, that the
23 cross-examination until we return next week.

24 THE CHAIRMAN: Well, we would not intend
25 to start cross-examination today, in any event,

1 MR. FREIDIN: If we can reconvene at one
2 o'clock, I think we can finish.

3 THE CHAIRMAN: Very well. We will
4 adjourn until one.

5 Thank you.

6 ---Luncheon recess taken at 11:40 p.m.

7 ---Upon resuming at 1:00 p.m.

8 THE CHAIRMAN: Thank you. Be seated,
9 please.

10 MR. FREIDIN: Q. Dr. Osborn, can you
11 please turn to page 51 of the witness statement. Do
12 you have that?

13 DR. OSBORN: A. I do.

14 Q. I would like to refer you to
15 paragraph 99 and, in particular, the second full
16 paragraph.

17 That paragraph states that:

18 "A particular relevant observation from
19 these analyses..."

20 Referring to the analyses that Mr. Gordon referred to:

21 "...shows that improved utilization and
22 mill recovery rates, increased use of
23 intolerant hardwood and a larger
24 regeneration effort all appear to be
25 factors which should be combined at the

1 appropriate levels. However, the
2 appropriate levels can only be estimated
3 from a series of analyses which
4 investigate the subtle interaction
5 between the many changing factors."

6 Could you explain what is meant by the
7 last sentence that I just read?

8 A. Yes. In essence what we had this
9 morning for the softwood coverytype, for example, were
10 three scenarios. Those three scenarios gave us some
11 indications of what we may or may not be able to do to
12 speak to: Will the wood supply last in softwoods?

13 But as can be seen, those are three of
14 many possible scenarios and it is only by looking at a
15 larger range of scenarios that one can obtain a better
16 understanding of the possible mixes, both today and
17 tomorrow, that should be and can be considered and
18 evaluated to end up with the most logical set of
19 actions from today forward.

20 So it is not just three one would
21 normally look at, but a series of them, and that series
22 of scenarios - 10, 15, whatever number might be
23 appropriate - are then evaluated, evaluated against the
24 objective, what it is we are trying to solve with the
25 model.

1 So the answers, if you like, are stacked
2 up one against another, how do they solve the problem,
3 whatever the evaluation criteria might be, and what
4 looks like the best one or two or three of those model
5 solutions, and then it is translated into: What does
6 that mean in real life.

7 Q. Are you indicating that you implement
8 one of the three or four scenarios that you have
9 identified?

10 A. No, I am not. And just to sort of
11 add to something that took place this morning, that
12 something obviously I didn't say yesterday, but now in
13 retrospect I wish I had say and I would like to add a
14 couple of statements to what was said yesterday in
15 terms of modeling that perhaps may explain some of what
16 I perceive to be a misunderstanding that took place at
17 the end of this morning.

18 There are some things that I did not say
19 about modeling, but from discussion this morning there
20 is obviously some misunderstanding of what is real life
21 and what is modeling and how the relationships between
22 those two are practiced. Because, as I have just been
23 asked, it isn't the results of the model that I
24 immediately implement, but something that is a little
25 bit different.

1 So I would like to explain the
2 relationship between real life and what I have entitled
3 the modeler's domain and it is purposely up in a cloud.

4 We have a real life problem, a forester
5 has a problem about which he or she thinks the tree
6 does not look the way he or she would like it to be.
7 It is the forester who attempts to solve that problem.
8 It is the forester who has got to turn around and do
9 something.

10 Now, the forester may turn to a tool or a
11 technique - in which case we are talking of a model -
12 to help think about and help add some guidance to what
13 the forester is actually going to do. The real life
14 situation.

15 And what I didn't explain clearly
16 yesterday was the forester, the practical on-the-ground
17 person has to think, extract some parts of that
18 problem, simplify that extraction and quantify what
19 part of that problem in conjunction with the modeler
20 can they fit into the modeler's domain: How it fits
21 into the tool.

22 I spent some time on this red thinking
23 box and the difficulty associated with translating the
24 problem into how the model will look at it, translating
25 the data and the simplification of the functions,

1 relationships and processes of the model.

2 And I did spend some time on this red
3 box and how the forester will talk with the modeler to
4 get the inputs, the function and the outputs of the
5 model.

6 But what came out of this morning's
7 discussion was a lack of perception about the output of
8 the model isn't what the forester on-the-ground
9 implement. The output of the model is still in
10 modeling terms. And to take today's analysis simply
11 for a moment, the model output could have been plant
12 10, seed 5, optimum mix, just to simplify it. That's
13 what comes out of the model, that's a modeling output.

14 Now, the forester then has to understand
15 what that output means, has to translate what that
16 output means into reality of action on the ground.
17 Plant 10, seed 5. There is a whole host of other real
18 life things that have to be considered to take that
19 simple model output and turn it into real life action.

20 I didn't explain in as much detail
21 yesterday this red box, the thinking translation from
22 the modeler's domain to real life, I didn't explain
23 that one as much perhaps as I should have done and it
24 gave rise to a misunderstanding this morning.

25 Mr. Gordon's expertise is on the ground.

1 He was describing a real life problem with a real life
2 set of thoughts. That wasn't what was really being
3 concerned about.

4 The comparison made this morning were
5 really with what really was taking place in real life,
6 thank you very much, new Brunswick/Ontario. And this
7 misunderstanding partly cropped up because of some,
8 again, some myths and misunderstandings with what is
9 modeling all about in relation to what's real life all
10 about.

11 We don't run with the output, the
12 computer printout, run and execute. We take the
13 computer printout outputs of the model and translate
14 that into a real life set of actions.

15 THE CHAIRMAN: Dr. Osborn, do you not
16 have to understand the intricacies of the model to in
17 order to understand how to translate it into reality?

18 That goes back to the question: If the
19 person who is doing the translating is not a modeler or
20 familiar with modeling the way it is done, methodology,
21 whatever you want to call it, is that person in a
22 position just to translate the output in a reality if
23 he doesn't understand a bunch of the various
24 assumptions and how the model works, et cetera, et
25 cetera?

1 DR. OSBORN: Unfortunately I am can't
2 give you a yes or no answer, sir.

3 The more the person in real life knows
4 about the functions, the relationships and the process
5 in here, the better they are, but I will turn around
6 your question.

7 We, all of us, plan tomorrow and the day
8 afterwards based upon the forecast. We do not know the
9 incredible complexity that goes into that model,
10 forecasting models, and they are at the moment one of
11 the most complex set of models being used right now.
12 None of us, I am quite convinced, in this room would
13 know the intricacies of meterology to understand what
14 happens in that model yet we all will plan based upon
15 the weather forescast.

16 Yes, sir, you are right. The more the
17 forester can know about this and the more the
18 development of the model takes place in conjunction
19 with the person on the ground the better, but there are
20 some things that will happen in these models that we
21 will use, with the user beware scenario, that this
22 person will run with.

23 There is a degree of teamwork involved in
24 this and we cannot become experts in all pieces of the
25 story. So I agree with your suggestion with some very

1 pragmatic comments, sir.

2 THE CHAIRMAN: Are you going to enter
3 that, Mr. Freidin?

4 MR. FREIDIN: I would like to.

5 THE CHAIRMAN: I believe it is 147.

6 Are you going to autograph that and we
7 will auction it off at the end of the hearing?

8 DR. OSBORN: It is diagrammatic, sir, not
9 real life, okay.

10 THE CHAIRMAN: What do you want to call
11 it?

12 MR. FREIDIN: The modeler's domain.

13 MR. CASTRILLI: It sounds like a lousy
14 hotel or something.

15 MR. FREIDIN: Explanation -- diagram
16 explaining modeling versus real life.

17 ---EXHIBIT NO. 147: Diagram explaining modeling versus
18 real life.

19 MR. FREIDIN: Q. One last question --
20 well, I have a couple more questions on modeling.
21 First, Dr. Osborn, do you have knowledge as to whether
22 or not Dean Baskerville used a computer simulation
23 model of some type in advance of preparing the results
24 and conclusions that are in Document No. 131?

25 DR. OSBORN: A. Yes, I do.

1 MR. CAMPBELL: Give me a break.

2 MR. FREIDIN: Q. Do you know, as a
3 result of -- without telling us -- before giving me the
4 answer, can you tell me the basis of that knowledge?

5 DR. OSBORN: A. Personal contact with
6 the staff in New Brunswick who, in essence, were
7 putting together the data for this analysis and this is
8 personal contact through my being a member for Ontario
9 on an Intra-Provincial Committee which embraces
10 representatives from all of the provinces and the rep
11 from New Brunswick happens to be somebody, therefore, I
12 know through that committee who is responsible for part
13 of the analyses that went into that document.

14 Q. Don't answer the question right away.
15 Did they or did they not use a simulation model?

16 A. Yes, they used a simulation model.

17 Q. Thank you. Dr. Osborn, can the
18 model's outputs be improved by using, as realistic data
19 as possible, for the inputs?

20 A. Yes.

21 Q. Where would one go to obtain
22 information of that sort?

23 A. A variety of sources as, particularly
24 as Mr. Gordon has gone through, there is a whole range
25 of data as input into that model, but certainly a large

1 part of those data come from local, in this case field
2 office or district level type of knowledge.

3 Q. And in relation to forestry, what are
4 you referring to when you say local?

5 A. I am talking of district level or
6 management unit level type information, from one of two
7 sources, field forester in terms of the silvicultural
8 relationships input, amount of work done, success of
9 work done, depletion record type of information and
10 secondly local industrial knowledge, timber industry
11 knowledge as regards demand utilization factors.

12 Q. Are you aware as to whether or not
13 the Timber Management Planning Manual which is being
14 used in Ontario at the present time by the Ministry of
15 Natural Resources have -- whether that manual will have
16 any influence or the use of that manual will have any
17 influence on the type of data available or its
18 usefulness for the purposes that you have described,
19 for this modeling?

20 A. Yes, it will have an impact and the
21 practice and use of that process - and I will refer to
22 exactly how and why in just a moment - can certainly
23 aid in two areas, and the first is a more comprehensive
24 and a more consistent method of recording what actually
25 has happened. So historical records of cut and other

1 forms of depletion.

2 For example, are spoken to quite
3 explicitly in Table 4.1 of Exhibit 7, and they record
4 in considerable detail the form of depletion and some
5 of those data, we have explained, we have had
6 difficulty in obtaining.

7 In addition, the manual and the process
8 requires industry at the moment to present its
9 requirement for the next five years in volume and as
10 that process becomes more and better established, I am
11 quite convinced that the thoughts of industry along
12 these lines will be to look at futures beyond just a
13 single five-year period which in turn will enhance the
14 thoughts of what the demands will be, looking into the
15 future.

16 So there is two -- at least two possible
17 places within that manual and process and the way it is
18 structured and the way data are recorded that should
19 aid improving the inputs for that model.

20 Q. Can any assistance be gained by
21 referring specifically to those tables?

22 A. Yes. If you look at literally Table
23 4.1.

24 Q. Exhibit No...?

25 A. Exhibit 7 and it is on page 33 of

1 Exhibit 7, which is the Timber Management Planning
2 Manual, page 33 which contains Table 4.1.

3 And that table is a report of the
4 depletion by area. Table 4.1 happens to be for the
5 five-year term. But within that table, which describes
6 the actual depletions, it not only describes the
7 harvest, it also includes the comment on the reserve
8 which is a set of questions Mr. Gordon was asked about
9 by the Board, it also includes columns that show the
10 natural depletions, which was a source of data that
11 gave us considerable difficulty in trying to obtain.

12 So there is a range of data recording
13 procedures now that ideally should augment an
14 improvement in the past records. We still have the
15 dilemma of whether history has repeated itself, that is
16 still true, but the past records are now in a more
17 consistent form, and the form and fashion that happens
18 to fit in with the structure of how the model is put
19 together.

20 Now, in addition to that Table 4.18.1
21 which is on --

22 Q. Page 89.

23 A. 89. Table 4.18.1 is a Forecast of
24 Wood Utilization by Licensee, an indication of the
25 licensee's requirement, the mill demand for the next

1 five-year period by species. Again, a direct input, as
2 far as we were concerned, into the model. So there is
3 at least two facets in this process that are augmented
4 in improving the input data.

5 Q. Mr. Cary, can I refer you to page --
6 paragraph 105 of the witness statement which you will
7 find on page 52.

8 MR. CARY: A. Yes.

9 Q. In that particular paragraph you
10 indicate the Ministry is reviewing the assumptions and
11 forecasts on which the '72 Forest Production Policy was
12 based?

13 A. That's correct.

14 Q. And that whether or not the policy is
15 ultimately changed by Cabinet, an analysis of the
16 validity of the assumptions and forecasts is required
17 to determine the actions and the level of investment
18 necessary to meet the long-term target established by
19 Cabinet.

20 Now, you have already given evidence as to
21 why the review was being undertaken. Can you advise at
22 this time whether the Ministry has decided how it will
23 approach this review?

24 A. Yes, I can.

25 Q. Well, would you provide us then with

1 some insight into the approach and the present status
2 of that review?

3 A. Yes. During this examination review,
4 we are going to do the following things and they are
5 outlined in paragraph 106 (a) through (e). Those are
6 going to be the primary factors we have to look at when
7 it comes to producing proposals for government dealing
8 with timber production.

9 Firstly, we will go back and have a look
10 at what demand has been since 1972 and then we will
11 update that forecast and project it into the future.

12 Secondly, we will make accurate more
13 predictions and come away from the fiber, objective of
14 the Forest Production Policy in 1972, into species and
15 products from the old and the new forest, so we will
16 get more precise about exactly what we are going to
17 produce and how much we are going to produce of these
18 species and products.

19 Because we have increased information
20 about forest sites now available to us - and you have
21 heard Mr. Armson speak about that earlier - we would
22 like to use that to make sure that we have an idea on
23 which piece of geography we practice silviculture and
24 linked very closely to that is item (d) and you have
25 heard Mr. Gordon and Dr. Osborn talk about levels of

1 silviculture. You heard about those this morning. The
2 old -- the new forest 1, new forest 2, new forest 3,
3 levels of silviculture effort and intensity needed to
4 produce the species and the products from that forest.
5 Where we practice that, as I have said, closely linked
6 to site productivity.

7 We will also use the model that's been
8 talked about yesterday and today to make those
9 simulations that we need to make in relation to demand
10 but, of course, consider the factors that are used in
11 the model calibrations.

12 To go onto, Mr. Freidin, the present
13 status of that review. Currently we are preparing a
14 series of background papers and those background papers
15 will deal with the following areas:

16 They will deal with the history and
17 development of the '72 Policy and track the process of
18 what we have done since then, identifying those
19 weaknesses and the strengths so that we can move
20 forward.

21 We will have a look at the socio-economic
22 context of timber production in Ontario. Thirdly, we
23 will have a look at demand, the demand for forest
24 products.

25 Fourthly, we will have a look at the old

1 forest to make sure we utilize it best, access it
2 properly and protect it. Coupled with that we will be
3 having a look at planning the new forest, making sure
4 the new forest is planned, established and tended in
5 the most appropriate place. We will also have a look
6 at the costs of both those exercises, stretching the
7 old forest and putting the new forest in place.

8 And lastly we will be having a look at
9 some of the environmental considerations that must go
10 hand in hand with any policy of this nature. We must
11 be cognizant of the environment we are working in.

12 Q. Can you advise, in a general way,
13 what will be done with these background papers?

14 A. Yes. The papers will be drafted and
15 then circulated to interested parties. The parties
16 will then have an opportunity to comment on each. The
17 results of those comments, the results of those
18 discussions will, I believe, put us in a position to go
19 forward with proposals.

20 Q. What are the possible results of
21 MNR's -- the Ministry of Natural Resources' review?

22 A. I am conjecturing here.

23 Q. Well, I am asking sort of in a
24 generic way, what are the possible results?

25 A. There can be three. There could be

1 no change, we could continue in the status quo.

2 There could be a recommendation for
3 another level of target and, thirdly, there could be -
4 and this would probably be related to the first
5 option - we could change the way how we do things,
6 change the Implementation Schedule, reschedule it, have
7 a look at our timing on that and then within the array
8 of activities that we implement at the field level, we
9 could change those.

10 So I think those are the three outcomes
11 that I see most likely.

12 MR. MARTEL: Could I ask what the second
13 one was, I missed it.

14 MR. CARY: The second one was a change --
15 a recommendation for a change of target, another
16 target, another level.

17 MR. CAMPBELL: I am sorry, Mr. Chairman,
18 I just missed the number of background papers?

19 MR. FREIDIN: What was the one you
20 missed?

21 MR. CAMPBELL: The couple after history
22 of 1972 Policy.

23 MR. CARY: The next one will deal with
24 the socio-economic context.

25 MR. FREIDIN: Q. Now, Mr. Cary, can you

1 advise: Is the process which is contemplated in
2 relation to this review of the existing Forest
3 Production Policy any different than the process which
4 was used in the development of the first Forest
5 Production Policy, 1972 that you are reviewing?

6 MR. CARY: A. I think the most marked
7 difference is involving the public. There was little
8 or no involvement of the public in 1972.

9 Q. Can you advise are there any other
10 differences between the 1972 exercise and the present
11 review?

12 A. Well, yes. We have learned quite a
13 lot over the last 16 years, so we now have different
14 techniques, we now have different information to work
15 from, so it is going to be a different exercise.

16 We also have different building blocks in
17 place. We have changed quite a lot over the last 16
18 years.

19 Q. And are any of the differences that
20 you referred to, differences which are differences of a
21 positive nature?

22 A. I believe so. I believe we are in a
23 different era now and we have, as I say, different
24 technology, much better technology, improved data, and
25 so I think the development of proposals for a new

1 Timber Production Policy will be a very challenging and
2 exciting task.

3 MR. FREIDIN: Those are my questions of
4 this panel, Mr. Chairman.

5 MRS. KOVEN: I wanted to ask Mr. Cary and
6 I think you told us before, but could you tell us
7 again, the idea of when you revised the idea of
8 reviewing, the looking at a new Timber Production
9 Policy?

10 MR. CARY: We have been talking about and
11 conducting reviews, as I intimated during my evidence,
12 Ms. Koven, for -- we have conducted -- for example, we
13 have had the Dixon Report which I have discussed.
14 There were elements of review in that.

15 We have adjusted the Implementation
16 Schedule twice. Now we believe it is time for a
17 systematic and thorough review and we have had this in
18 mind since 1986.

19 MRS. KOVEN: And the work that has gone
20 on with respect to starting a review for a new Timber
21 Production Policy has that been separated from the work
22 that went on in developing the EA?

23 MR. CARY: No, it hasn't. In terms of
24 thinking, we have had to do some thinking about
25 proceeding with the review over the last two years. So

1 in that context the EA thinking has gone along with the
2 thinking about Forest Production Policy.

3 MRS. KOVEN: How do you see the EA or
4 this review fitting in the process you are going
5 through now with the EA.

6 Do you see it as something quite
7 separate?

8 MR. CARY: No, not separate. What we are
9 going to do is the subject matter of this EA, in
10 essence, the modeling, the predictions, what we are
11 telling you about now we are going to do during the
12 review process. So our activities are going on on a
13 daily basis.

14 So, in that context, it is a parallel
15 exercise, but we don't see it being -- it is coincident
16 at the time. I am not quite sure what you are getting
17 at, I am sorry.

18 MRS. KOVEN: Well, I am not getting at
19 anything really. I just want a better understanding of
20 how important an issue the review of a new Timber
21 Production Policy is in the planning by the Ministry?

22 MR. CARY: It is extremely important. I
23 think I said earlier it has been our hallmark policy
24 for the last 16 years and here we have an opportunity
25 to produce a new Timber Production Policy which will, I

1 believe, be even better than the last one. So it is an
2 extremely important exercise.

3 MRS. KOVEN: And how long will it take
4 before you have an idea of what the new Timber Policy
5 would look like?

6 MR. CARY: I can't tell you now.

7 MRS. KOVEN: But years. Not months.

8 MR. CARY: No, we are not. We are
9 talking -- Because of public involvement we have to
10 make sure that the public gets a good opportunity to
11 examine the papers and respond and it is only after
12 that that we will develop some proposals.

13 So I expect a minimum of a year from now.

14 THE CHAIRMAN: Okay, ladies and
15 gentlemen, before we break for the day there is just
16 another couple of matters I want to deal with.

17 The Board has before it now a document
18 which refers to the site visit taken by the Board, July
19 18th through 21st, 1988 which contains a list of the
20 people who attended and it is basically in the form of
21 an itinerary, starting out with Day 1, which also
22 includes where we went and what activities we saw and
23 continues in this format through Day 2, 3 and 4.

24 I suppose there is a couple of ways we
25 can handle this. One could be to admit it as an

1 exhibit, although it is not evidence as far as the
2 Board is concerned in the usual sense of evidence, it
3 is not going to be subject to cross-examination or we
4 are not going to entertain questions on it or anything
5 like that.

6 But we would like to get at least the
7 factual information, and there is no editorializing in
8 this, it just indicates who was there, when it took
9 place and where we went, essentially, on the record.
10 And the most convenient way might be by way of
11 admitting it as an exhibit.

12 The second method would be to distribute
13 it to everyone on the full-time correspondence list and
14 just refer to it in the record which is now in the
15 transcript by what I am saying to you now and have it
16 go into the record file as another document, much in
17 the way correspondence is filed that reaches the Board
18 in connection with this matter.

19 Personally I think it would be, from a
20 point of view of people having access to it, be better
21 if it were made an exhibit. And unless counsel has any
22 objections to that, I would like to proceed on that
23 basis.

24 MR. FREIDIN: I have no objections.

25 MR. CAMPBELL: I would support proceeding

1 on that basis, Mr. Chairman.

2 MR. TUER: I agree, Mr. Chairman.

3 MR. CASTRILLI: No objections, Mr.
4 Chairman.

5 THE CHAIRMAN: Very well. We will admit
6 this as Exhibit No. 148.

7 MR. MARTEL: I can't get over that, all
8 the lawyers agreed on that in one shot.

9 THE CHAIRMAN: It happens occasionally,
10 not often, occasionally

11 MR. CAMPBELL: It is the skill of the
12 presence.

13 MR. CASSIDY: Persuasive.

14 THE CHAIRMAN: That's right. Very well.
15 Exhibit 148 will be a document related to the site
16 visit taken by the Board July 18th through 21st, 1988.

17 And, ladies and gentlemen, I have some
18 extra copies of this document here which we will leave
19 on the side table. If counsel here would like to pick
20 up a copy before they leave, they can.

21 ---EXHIBIT NO. 148: Document pertaining to Board's
22 site visit July 18-21, 1988.

23 THE CHAIRMAN: Now, the last matter the
24 Board would like to deal with just very briefly, I
25 apologize for returning to it again, but it involves

1 Dean Baskerville.

2 Are there any parties other than the
3 proponent who intend to call Dean Baskerville as a
4 witness at the time that they choose to present their
5 evidence to the Board?

6 And you can have another go, Mr. Freidin
7 as well if you want to respond to that question on
8 behalf of the Ministry?

9 MR. FREIDIN: I can ---

10 THE CHAIRMAN: Sorry?

11 MR. FREIDIN: I can and I will.

12 THE CHAIRMAN: Okay. Do you want to
13 respond before I respond?

14 MR. FREIDIN: We hope to contact Dean
15 Baskerville tomorrow and make a request that he attend
16 as a witness on our behalf.

17 THE CHAIRMAN: Very well. That will
18 obviate the necessity for me to continue on on this
19 topic. Thank you.

20 I think we can now adjourn until next
21 Monday at one and at that time we will commence with
22 Mr. Tuer on behalf of his clients.

23 Has anybody heard anything as to whether
24 Mr. Williams will be involved in any cross-examination
25 concerning this panel?

1 MR. FREIDIN: I spoke to Mr. Williams
2 last week and I didn't put the question specifically to
3 him, but he felt that he would not be returning until
4 Panel 6, that he wouldn't involve himself in Panels 4
5 or 5.

6 THE CHAIRMAN: Very well. All right,
7 right after Mr. Tuer's presentation, we will go to you,
8 Mr. Castrilli, and you indicated you will be
9 approximately three days.

10 MR. CASTRILLI: Yes, that's correct.

11 THE CHAIRMAN: Thereabouts. We will only
12 interrupt that, if necessary, to accommodate Mr.
13 Edwards on Thursday for about three hours.

14 And then if you are not finished we will
15 continue on the following week to be followed up by Mr.
16 Campbell.

17 Very well, we will adjourn until 1:00 p.m.
18 on Monday.

19 ---Whereupon the hearing adjourned at 1:40 p.m., to be
20 reconvened on Monday, August 15th, 1988, commencing
21 at 1:00 p.m.

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VOLUME XXXI

Re: Video Presentation:

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